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Music Hall Renovation Study

March, 1975
Boston Redevelopment Authority

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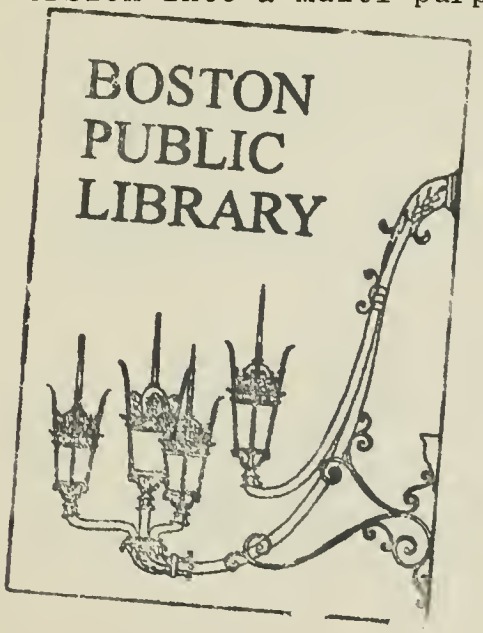
Preface

The completion of this initial Music Hall Renovation Study prepared by Cambridge Seven Associates for the Boston Redevelopment Authority staff, is an important milestone in our effort to improve the performing arts facilities in the city of Boston.

The BRA commissioned this study after an initial report describing the idea of converting the Music Hall into a performing arts facility was received with widespread enthusiasm. Consequently, Cambridge Seven Associates was asked to determine the specific scope of work required to make the Music Hall suitable for opera and ballet. In the course of their analysis, the existing building conditions were carefully reviewed and potential users were consulted to determine basic space and performance requirements.

As the findings of this report indicate, we are convinced that the Music Hall can be renovated and expanded into an excellent facility that would please both performer and patron; and that the work could be accomplished at a cost which is substantially less than the cost of a new facility. It is our hope that this report will stimulate interest and eventual funding for the Music Hall renovation project.

The specific recommendations and proposals presented here are not intended to be final. Instead, they should serve as a beginning to actual design development. We also believe that while it may be feasible to locate an Opera Center adjacent to the Music Hall, the high costs of such a project and the uncertainty of the land's availability require that the major effort be directed toward the Music Hall's conversion into a multi-purpose performing arts facility.



Robert T. Kenney, Director
Boston Redevelopment Authority

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26 February 1975

Louis J. Bakanowsky
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Paul E. Dietrich
Thomas H. Geismar
Terry Rankine
Charles Redmon

Mr. Robert T. Kenney, Director
Boston Redevelopment Authority
City Hall
Boston, Massachusetts 02201

Dear Mr. Kenney:

The attached report completes our initial study of the proposed renovation and expansion of the Music Hall.

We have looked at the minimum requirements of opera and dance, established a scope of basic restoration and renovation, and outlined a number of additional options that will further improve the functioning of the auditorium and stage. In addition we have developed a design concept and cost estimate for the creation of a "Theatre Park" at the corner of Tremont and Stuart Streets, adjacent to the Wilbur Theatre and behind the Music Hall along Stuart Street.

Our studies have fully convinced us that renovation and expansion of the Music Hall will result in an excellent and versatile facility, and at a small fraction of the cost of comparable new construction.

Whether or not this remarkable theatre will manage, after due consideration, to satisfy the desires of all touring and resident companies, it is clear to us that it should be saved. Boston can ill afford to lose another resource of such rare value and quality.

We look forward to assisting you further in your efforts on behalf of both the Music Hall and the performing arts in Boston.

Yours sincerely,

Peter Chermayeff
Cambridge Seven Associates, Inc.

MUSIC HALL

RENOVATION STUDY

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Cambridge Seven Associates, Inc.
February, 1975

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Inputs from the following potential users are acknowledged with appreciation:

Boston University Celebrity Series
Walter Pierce

Boston Ballet Company
Michael Judson
Al Petrucelli

Boston Opera Association
John L. Thompson
Nelson W. Aldrich
Herman Woerner

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Sarah Caldwell
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Robert Green
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CHAPTER 1

INTRODUCTION AND SUMMARY

CHAPTER 1/INTRODUCTION AND SUMMARY

The Need

Boston has a reputation throughout the world as a cultural center, yet for almost two decades it has lacked any facility of reasonable quality for the performance of opera and ballet. Perhaps it is because Boston has such a rich diversity of offerings, from both resident groups and from touring companies, that no one group or company has yet been able to develop enough financial strength or community support to remedy the situation. It has often been hoped that by combining their efforts, major groups and their supporters could spur the development of an appropriate new complex of theatres to be shared, but even that hope has been frustrated by the greatest obstacle of all, high construction costs and continual cost escalation.

Economy of Recycling

This study arose because the Boston Redevelopment Authority recognized that one way to resolve this dilemma might be to renovate and modify one of the many theatres that have been for so long a neglected resource in the downtown. The Music Hall was identified as a possibility, partly because of its size, acoustics and grand interior character, and partly because of adjacent land being available for stage expansion. The basic assignment has been to determine how good a facility it might become, and at what cost.

The Metropolitan Theatre/1925

In 1925, the Metropolitan Theatre, now the Music Hall, opened to the public in Boston, the second largest and one of the most lavish theatres of the movie palace era. Very successful for several decades, and including among its attractions live stage shows, the big bands of the 30's and 40's, and appearances of stars from film and radio, it offered large numbers of people not only diverse forms of entertainment, but a comfortable downtown gathering place. An illustrated booklet prepared by the Boston Redevelopment Authority, describing the Metropolitan Theatre's history in some detail, accompanies this report.

In 1957, when the Boston Opera house was demolished, the Metropolitan Theatre became known as the best house in Boston for New York's Metropolitan Opera, and a wide variety of large touring productions have continued to use the theatre since its change of management and name in 1962.

Music Hall/1962

In recent years the Music Hall has been successfully used for a variety of purposes, including rock concerts, celebrity appearances, other special events and a continuing schedule of motion pictures. In spite of its severe existing stage limitations, poor dressing rooms and generally deteriorated condition, it has been substantially used for ballet and for touring performances of opera. Engagements have included among others, the Bolshoi and Kirov Ballets, the Royal Ballet of London, the Swedish Ballet, the Moiseyev Dancers and the Stuttgart Opera. The Music Hall has been found to be the best available facility in Boston for opera and ballet by three important groups: The Boston University Celebrity Series, who each year book into Boston a wide variety of touring companies and special guest appearances; the Boston Ballet company, a resident company who present an annual season ob ballet; and the Boston Opera Association, who bring the Metropolitan Opera's tour to Boston each year.

Shared Program Objectives

These three groups, as described later in this report in detail, have identified similar stage and auditorium and dressing room requirements for their preferred forms of opera and ballet, and each has expressed a need or preference for high seating capacity, 4,000 or more. Since each of these groups would approach their use of the theatre on the basis of short-term engagements, and none of them would require on-site facilities such as production workshops, rehearsal and administrative space, they are in an optimum position to combine their requirements within a relatively modest building program.

Opera Company Requirements

The Opera Company of Boston, however, Boston's major resident opera company, has a very different and much larger set of requirements for a new home. These include a need to combine primary performing facilities with directly adjacent rehearsal space, shop space, and administrative space, a desire to further relate all of these ancillary facilities directly to two adjacent additional theatres, seating approximately 800 and 400, and a desire to include in development plans an outdoor performing area and facilities for a School of Opera and for a National Operatic Resource Library. This Opera Center concept is described in detail in Chapter 3.

The Opera Company of Boston also differs very strongly and fundamentally with the other three major groups inthat the Opera Company wants a smaller main house, closer to 2,000 seats,

with a resulting intimacy of scale, room sound, and seat-to-stage distance.

One of the tasks of this study has been to explore options of user compromise, such as modifications to the house that would establish a reduced base of high quality seats, and possibilities such as movable partitions or curtains that would allow users to alter both the space dimensions and the seating capacity.

Whether or not this kind of flexibility, if provided, really works well is an inevitably subjective question, one that this study cannot pretend to answer; but by providing illustrative program data, illustrative schematic drawings, outline specifications and a detailed early estimate of construction costs, it provides a basis for evaluation by all concerned.

Composite Program/Area I

The stated program requirements of individual users, and a composite program, are outlined in some detail in Chapter 2, Part A. A brief summary of the composite program requirements is provided at the end of this chapter.

The Site

The Music Hall is located at the heart of Boston's theatre district, between Stuart, Tremont and Washington Streets. Two of Boston's finest small theatres are next door and across the street, the Wilbur and the Shubert.

Renovation and expansion of the Music Hall, resulting in its more substantial use by theatre-going audiences, would have a significant economic impact on the adjacent theatres, restaurants, retail and other activity of the district, and is desirable for reasons of downtown revitalization alone.

The theatre entrance is located on Tremont Street, with good street access by car and taxi, and reasonable distance from bus routes and rapid transit stations of the Green and Orange Lines.

A 900 car parking garage, owned and operated by Tufts New England Medical Center, is located on Tremont Street directly to the south of the Music Hall, offering theatre patrons convenient parking in the evenings and weekends.

A wedge-shaped plaza, landscaped with trees, paving, and lights, is located directly between a restaurant, at the arcaded ground floor of the garage, and the south side of the Music Hall. This plaza offers a potential for outdoor use by theatre audiences during warm seasons, and suggests the possibility of further strengthened activity through additional restaurant frontage, outdoor restuarant use, and mid-block pedestrian circulation between Tremont and Washington Streets.

Adjacent Land

At the north side of the Music Hall, between the existing stage and Stuart Street, space is available for the stage expansion, and at the corner of Stuart and Tremont, north of the Wilbur, space is also available for related public purposes such as the proposed theatre park. This land, with the Music Hall, is referred to in this study as Area 1.

To the east of the Music Hall is a currently open area, owned by Tufts New England Medical Center who intend to utilitze it for future expansion. Nevertheless, in the interest of developing the concept of a comprehensive opera center for the Opera Company of Boston, the study encompasses this area as well, and refers to it as Area 2. Chapter 3 of this report outlines these possibilities in detail, including illustrative drawings and cost estimates.

Boston Common
Boylston Street
Colonial Theatre
Tremont Street
Publix Theatre
Essex Street
Pilgrim Theatre
Gary Theatre
Saxon Theatre
Washington Street
Beach Street
Center Theatre
Stuart Theatre
Stuart Street
Kneeland Street
Wilbur Theatre
BRA Property
Music Hall
Shubert Theatre
Tufts Property
Charles Playhouse
Charles Street Extension
Tremont Street
Parking Garage
Washington Street
Tufts New England Medical Center
Harrison Avenue

Minimum Requirements

The objective of this study has been to determine an appropriate minimum level of renovation and new construction required to bring the building up to standards encountered in numerous cities throughout this country and other parts of the world. Since cursory examination of a project of this complexity often produces over-optimistic and misleading cost estimates, we have chosen to undertake quite detailed and comprehensive studies of necessary stage, auditorium and dressing facilities, as well as of general architectural work, structural problems, and the requirements of safe egress, heating, ventilating, air conditioning, electrical, plumbing, and numerous other items.

Our studies revealed that many of the most costly items are required to bring the building up to current code requirements. Although much of the scope called for, as described in detail in later sections of this report, may be modified and perhaps reduced in cost during later phases of design development, it is our view that more conservative assumptions are the appropriate basis of a cost estimate at this time.

Design Approach

The underlying design premise of this conceptual study has been to accomplish a new level of quality at the least possible cost, in part by restoring the original design by Clarence Blackall, and in part by introducing, without inhibition, carefully developed new elements and details that reinforce and improve on the original design. Our intent is to treat this remarkable building with respect, through restoration as well as through partial redesign.

The objective can be summarized not as the restoration of a great movie palace, for its own sake, but the economical creation of an up-to-date and first-class facility for opera, ballet and other performing uses, by adapting and working from the movie palace base.

Music Hall Exterior

The Music Hall does not currently present itself gracefully at the street, partly because the theatre itself is located behind the dominant 14 story office structure, with only the outer lobby and vestibule visible at the Tremont Street entrance. A large projecting sign, a large canopy with marquee, protruding ticket booths, murals and lights, all added to the building in recent years, severely damage the original architecture. Their removal, together with careful restoration and minor modification of the lower levels of

the building's front and south facade, will allow the original architecture to emerge once again and with increased rather than diminished quality. A handsome and inviting theatre front and entrance even more refined in appearance than the 1925 original, is possible at relatively modest cost.

Outer Lobby Spaces

Proposed restoration in the outer lobby areas includes removal of obtrusive elements, a new box office with three new ticket windows, new lighting and carpeting, and the provision of a new refreshment facility, relocated from the central lobby to the side arcade, adjacent to the Grand Lobby.

Grand Lobby

Proposed improvements to this extraordinary space are minor in scope, including removal of the fountain, some revisions to handrails and other details, general repainting, carpentry, and a substantial emphasis on new lighting to bring out the architectural details and mural paintings of the ceiling. New lighting, perhaps more than any other element, will enhance the existing qualities of the space and create a more elegant general atmosphere.

Main Auditorium

Problems in the main auditorium space include seeing and hearing difficulties under the balcony, an inadequate orchestra pit, and inadequate lighting and control facilities. Proposed new work includes, at a minimum, a sound reinforcement system, enlargement of the orchestra pit, three follow spot positions within existing openings of the domed ceiling, masked side lighting at the proscenium, a lighting bridge with sound reflectors at the top of the proscenium, a new control booth at the reat of the orchestra, new carpeting, new house lighting and re-upholstered seats. A lighting bridge within the auditorium space, plus sound reflectors, as shown in cross section, drawings 7 and 9, are being called for at this time with full recognition of their unavoidable visual obtrusiveness within the handsome architecture of the hall. At this time they are considered necessary to the acoustical and stage lighting requirements of the theatre. During subsequent phases of design development that can include detailed sound reflection tests in the space, need for these elements can be further investigated.

Alternatives/Auditorium

A number of alternatives have been identified, above and beyond the basic scope, including new seating and an orchestra

pit lift that would rise to become a forestage. Sightlines of the orchestra seats under the balcony would be greatly improved by increasing the rake of the orchestra floor, which inevitably leads to elimination of the loges. Alternatives include respaced conventional seating on this new floor, retaining the existing aisle system; and the transformation of the entire orchestra area to continental seating, with the major advantage of increased comfort and solidification of the audience into a single entity, but with the disadvantage of reduced seating capacity, totaling 3,648.

With the provision of continental seating, and the provision of a curtain that closes off 618 seats in the third balcony, the auditorium space becomes visually reduced in size, and the seating becomes reduced to 3,030. It is at this point that a possible compromise position emerges between the desires of the Opera Company of Boston for a smaller house, and the desires of other groups for a maximum seating capacity. Seating options are outlined in detail in Chapter 2 and are shown in the drawings.

New Stagehouse

Backstage requirements of all interested users call for the existing stagehouse to be demolished, and a much larger new one to be constructed. Limited space between the existing proscenium and Stuart Street causes the stage depth to be 70 feet, and the rear wall of the Wilbur limits the wing space at stage right to 38 feet.

Other major components of the stagehouse include truck loading bays from Stuart Street, or optionally from Washington Street, a stage elevator to dressing areas below, and a complete loft rigging system. For a detailed description of all theatre performance systems and equipment, see Chapter 2 of this report.

Function Room/Restaurant

The existing men's smoking room, at the basement level below the outer lobby, has been identified as leasable space that could become a restaurant, with direct access to the outside, or as a function room available to patrons of the theatre.

Proposed Scope of Work

The proposed scope of construction is outlined in detail in Chapter 2, and is summarized at the end of Chapter 1.

Cost Estimates/Area 1

As described in detail in Chapter 2 of this report, and summarized on Page 24, the estimated construction cost of the basic recommended scope of work for the Music Hall is $6,470,000. Although later phases of design development may reveal possibilities of deleting or economizing on some of the items called for in this report, we consider this figure to be a realistic base budget with which to proceed at this time.

When compared in cost to newly constructed theatres of comparable size, and of comparable or lesser quality, as indicated by data provided in an appendix at the end of this report, there is no question that the Music Hall, expanded and renovated at $6,470,000 offers the City of Boston a unique opportunity.

Stuart Street Frontage

Stuart Street, one of the primary avenues of the theatre district, should maintain, in our opinion, the lively visual appearance and invitation to pedestrian activity that it has always had.

The contruction of a massive blank-walled stagehouse at the rear of the Music Hall, by itself, inherently exerts an overpowering and deadening influence on the street. We therefore propose that retail space with live frontage for small shops be constructed behind the stagehouse (with dressing rooms above) and that development of the corner property at Washington and Stuart Streets provide an architectural continuity so as to both envelope the stagehouse as much as possible and provide additional shop frontage at ground level.

Theatre Park

At the corner of Tremont and Stuart Streets, a narrow sliver of land abuts the Wilbur Theatre and the proposed new stagehouse of the Music Hall. The land is further limited in width by need for truck delivery access to the stage of the Wilbur. Since this corner enjoys an extraordinary visual exposure to the surrounding streets, including vehicles and pedestrians, we propose its development for purposes that would usefully serve the public, day and night, and with a design that would make it a symbolic focal point of the theatre district.

A major component of this proposal is a theatre bulletin tower, in effect a marquee for the district, made up of rentable backlighted panels. Through careful design of the panels, each framed by rows of small bulbs, the tower would become a strong but elegant event in the streetscape. Its excellent visibility from four directions allows it to become a source of information as well as of visual vitality. As suggested by the illustrative drawing, it would also make possible the reduction in size and the reticent redesign of marquees at the Music Hall, the Wilbur and Shubert. The facades of these handsome theatre buildings could then re-emerge from behind their currently obliterating signs.

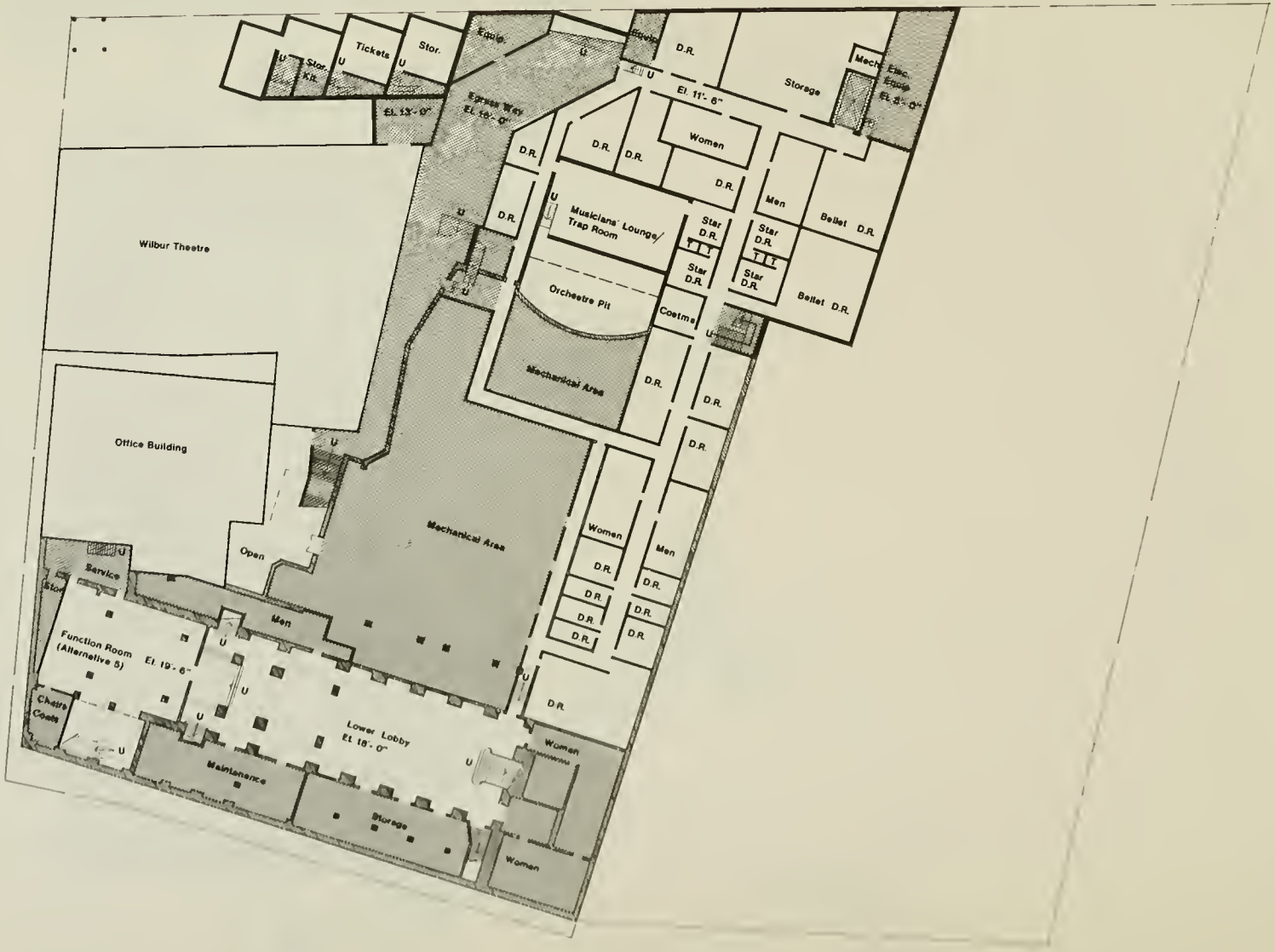
Other components of Theatre Park include a small restaurant/cabaret, with a sidewalk cafe and with roof terrace service during good weather, a theatre ticket sales office, serving the entire city, and a retail book store that might specialize in the literature of the performing arts.

All of these facilities would be open and illuminated during both the day and at night. Theatre Park, in combination with other lively ground level retail activity along Stuart Street, could play an important role in the revitalization of this part of Boston's downtown.

To emphasize this concern that continuous retail frontage and pedestrian activity should occur along the full length of Stuart Street, the perspective drawing and site plan on the following pages include illustrative proposed construction at the Washington Street corner. It is our recommendation that the corner site, owned by the Boston Redevelopment Authority, be developed as a part of the Music Hall Project, perhaps primarily for office uses, so as to maintain the continuity of ground floor retail, and of street scale and massing, making a transition to the adjacent structure of the Tufts New England Medical Center. By treating the entire Stuart Street frontage of the Music Hall site as a single architectural entity, the massive new stagehouse can be effectively surrounded with activity and become visually integrated with the street.

wilbur

Boston Common
Boylston Street
Essex Street
Colonial Theatre
Tremont Street
Publix Theatre
Pilgrim Theatre
Washington Street
Gary Theatre
Saxon Theatre
Beach Street
Center Theatre
Stuart Theatre
Stuart Street
Kneeland Street
Theatre Park
Wilbur Theatre
New Stagehouse
Area 2
Area 1
Music Hall
Shubert Theatre
Charles Playhouse
Charles Street Extension
Tremont Street
Parking Garage
Washington Street
Tufts New England Medical Center
Harrison Avenue
12



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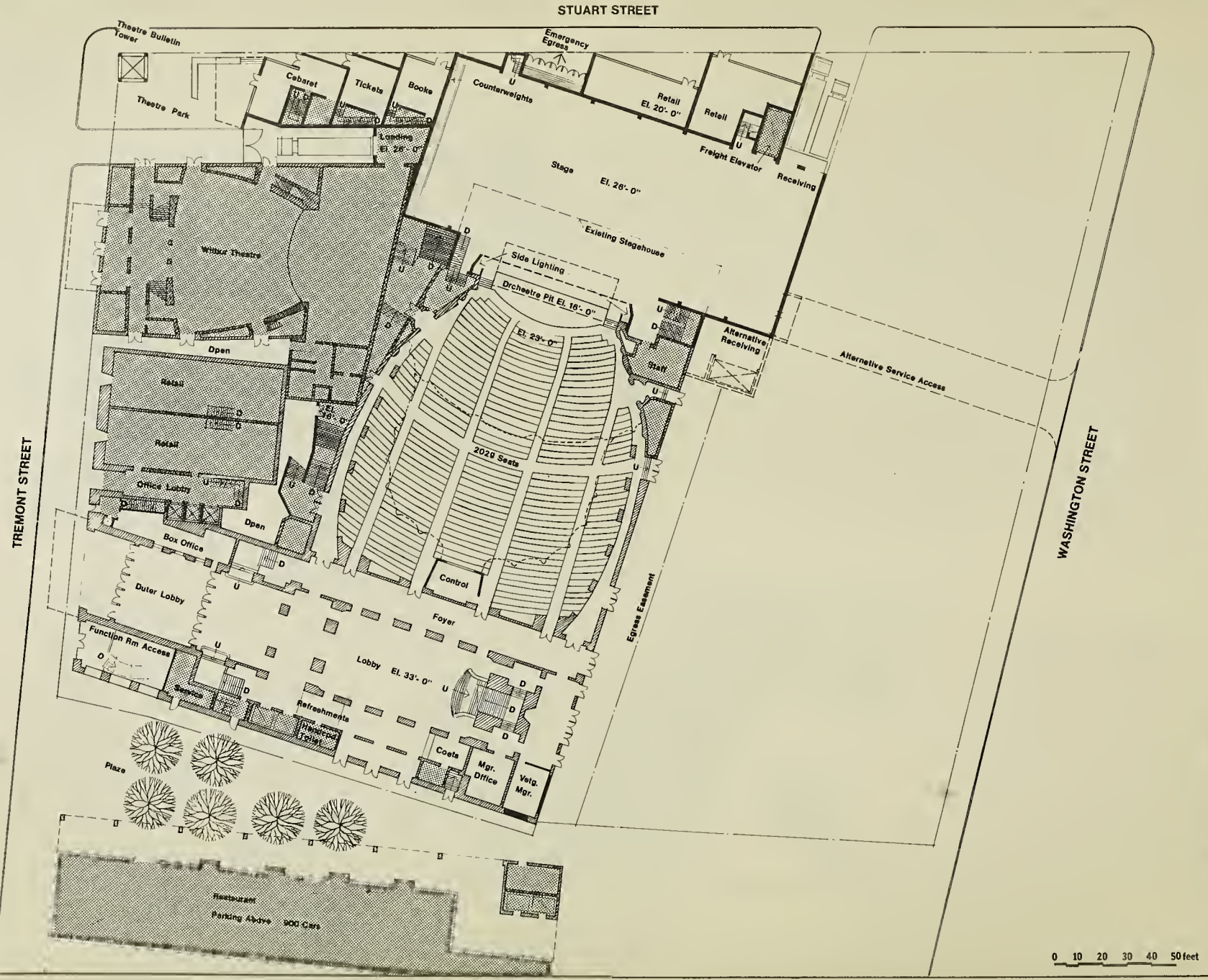
MUSIC HALL
RENOVATION STUDY

Area 1
Basement Level

1



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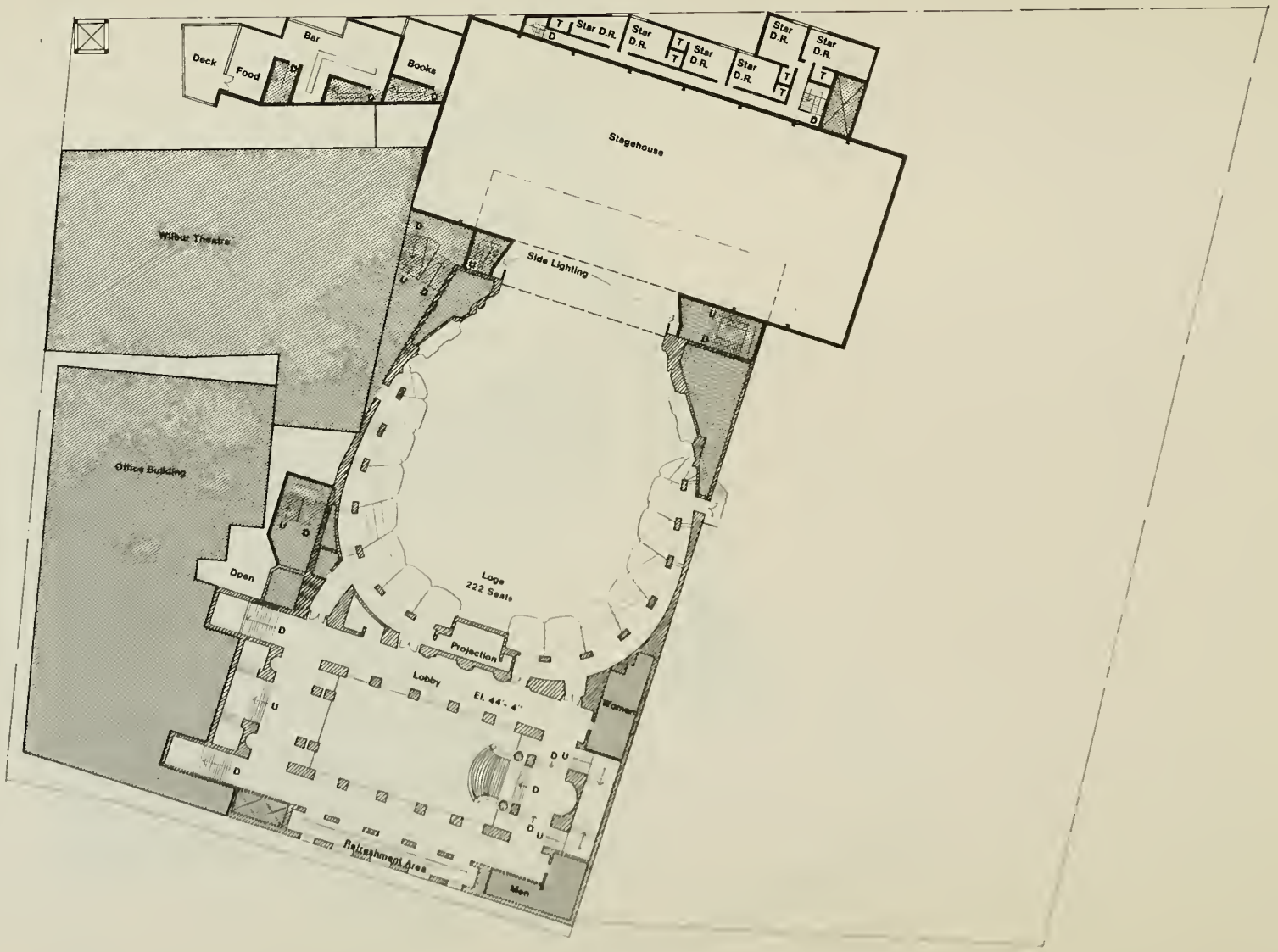
MUSIC HALL RENOVATION STUDY

Area 1
Orchestra Level

2



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RENOVATION STUDY

Area 1
Loge Level

3

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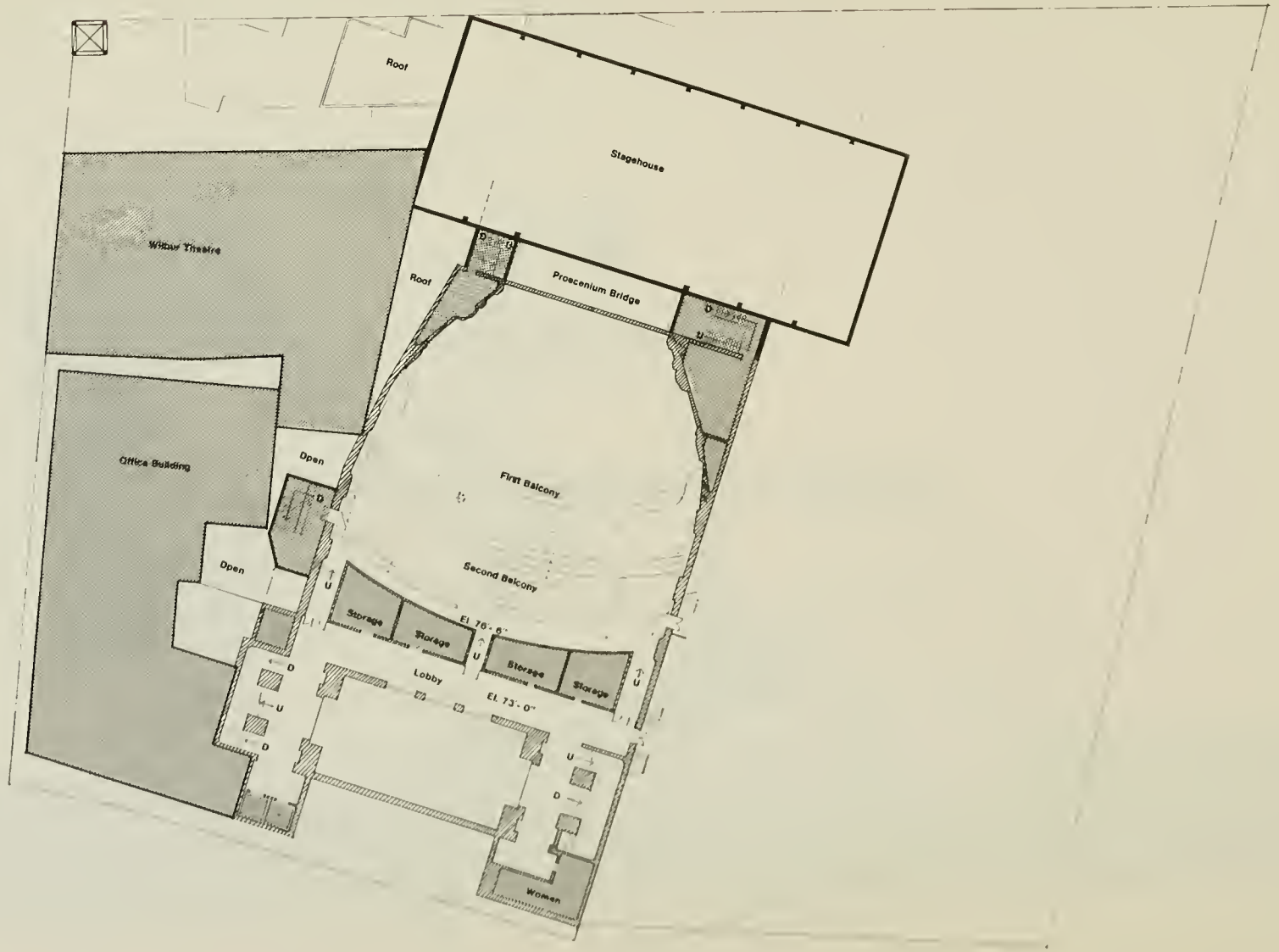
MUSIC HALL RENOVATION STUDY

Area 1
First Balcony Level

4



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MUSIC HALL
RENOVATION STUDY

Area 1
Second Balcony Level

5

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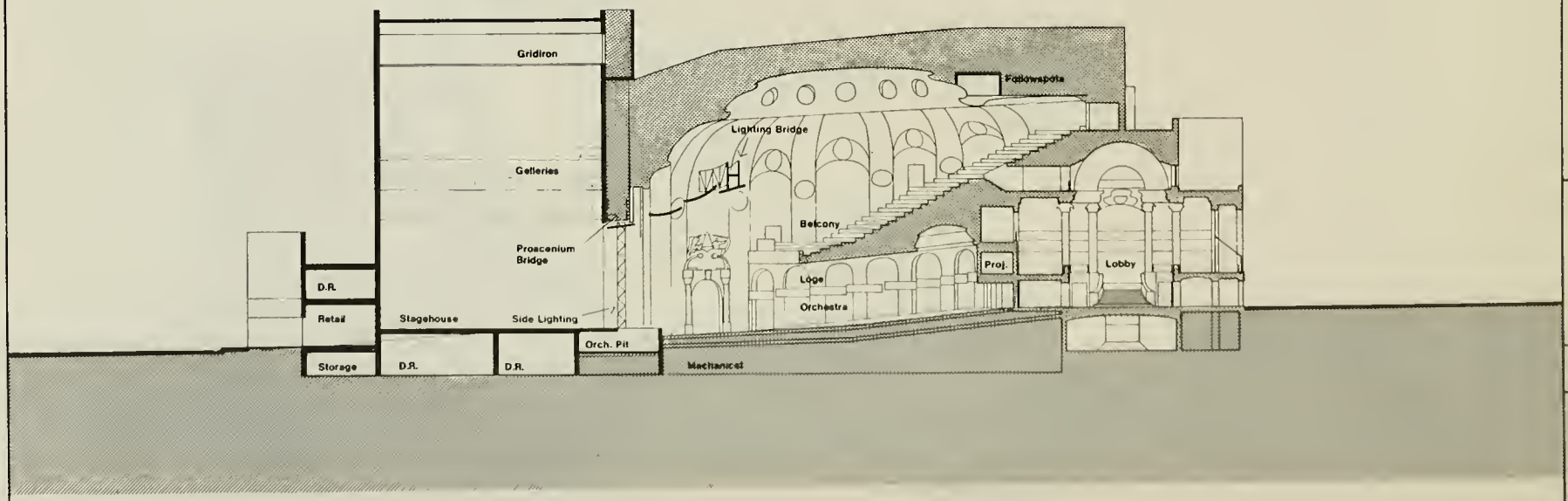
Area 1
Third Balcony Level

6



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MUSIC HALL
RENOVATION STUDY

Area 1
Section

7

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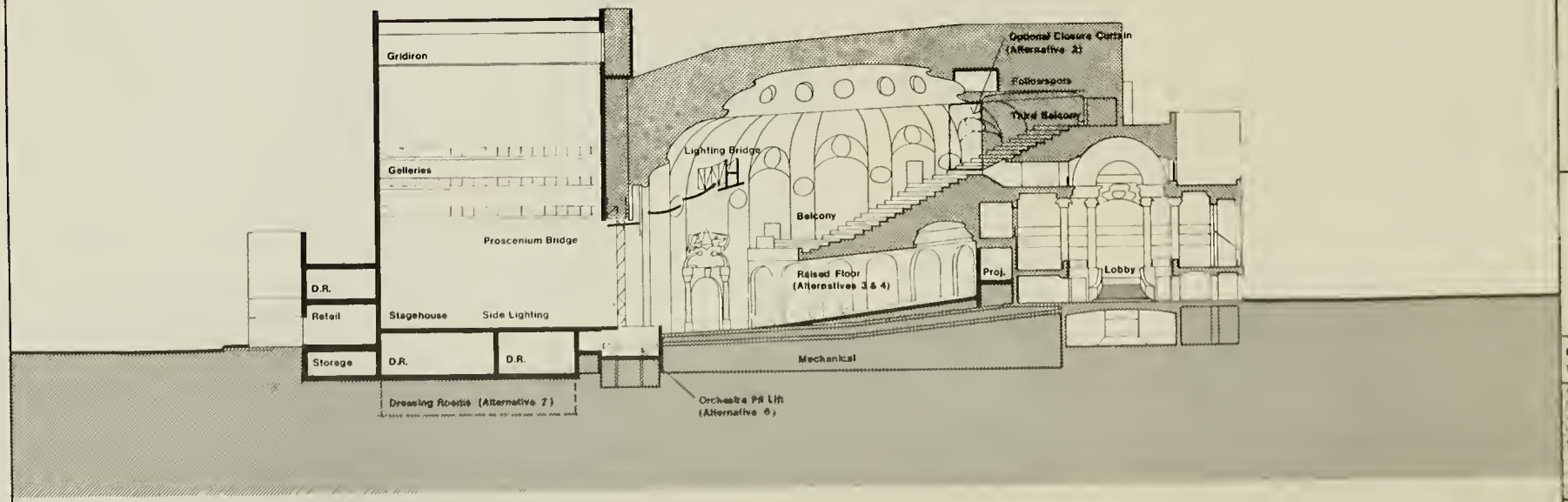
Area 1
Orch. Level-Alternative

8



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MUSIC HALL
RENOVATION STUDY

Area 1
Section-Alternative

9

AREA 1/COMPOSITE PROGRAM REQUIREMENTS/SUMMARY

The House and Performance System

Seating: Retain as nearly as possible, the present number of seats (4,225); provide an optional means of temporarily reducing the number of seats to 2000-2500 (thereby improving the intimacy of the house)
Acoustics, lighting, sightlines: Improve acoustics of the house, particularly for opera; provide basic stage lighting; provide performance control from the rear of the house; correct sight line problems; improve the house lighting.

Lobby

Box Office: Expand to three windows; provide adequate out-front office space for visiting companies.
Patron Facilities: Improve facilities for serving refreshments; improve coat rooms; increase toilet facilities; and provide a function room with bar and catering capability.

Stage House and Performers Facilities

Stage Size: Increase stage depth and side space at each wing to the maximum extent possible and provide full scenery placement capability over the expanded area.
Orchestra Pit: Expand to accommodate up to 90 musicians, with improved access from below.
Receiving and Dressing: Provide adequate receiving and storage space, dressing rooms and rehearsal space.

General

Upgrade plumbing, mechanical and electrical systems, and egress facilities, up to code requirements, and upgrade general quality of the building through minimum degree of new lighting, painting, carpeting, graphics and other renovation.

AREA 1/PROPOSED SCOPE OF WORK/SUMMARY

Basic Work

Stagehouse Expansion		
-Addition, including 2 truck bays	36,500	SF
-New stage dimensions (70d x 136w. x 90h.)		
-Enlarged orchestra pit		
-Retail space	9,300	SF
-Dressing rooms below, with elevator connection		
Performance Systems		
-Followspot locations, proscenium lighting bridge, house lighting bridge.		
-Side lighting, lighting and control system, stage rigging system, curtains, masking, projection screen and sky drop.		
Renovations	88,000	SF
-4,039 seats, all reupholstered		
-New egress structure between the office building, Wilbur Theatre and Music Hall	5,000	SF
-New dressing rooms, storage ares, and toilets		
-Two new ticket windows, with a visiting manager's office		
-New carpeting throughout public area; new refreshment serving area; repair and re-paint all surfaces in public and backstage area		
-Provide new marquee and graphic elements, remove exterior ticket booth, lobby fountain, and lobby wall relief.		
-Repairs and improvements to plumbing, HVAC and electrical systems.		
TOTAL Gross floor area	138,800	SF

AREA 1/CONSTRUCTION COST AND TIME/SUMMARY

1.	Basic Work, including:	$ 6,500,000	14 months*
	Stagehouse expansion 3.0 M		
	Performance systems 1.0 M		
	Renovation work 1.9 M		
	Contingencies, 10% .6 M		
2.	Optional work, including: new seating, orchestra lift, full-size rehearsal area	$ 1,300,000	up to 3 months additional
3.	Theatre Park, including: buildings, sitework, and Theatre Bulletin Tower	$ 800,000	no increase in time

* Assumed start of construction: December, 1975.

See Chapter 2, Part D, and the Appendix for detailed information regarding Area 1 costs.

AREA 2/CONSTRUCTION COST AND TIME

Estimated costs and construction schedule of a possible Opera Center on adjacent property described as Area 2 are provided in Part E of Chapter 3.

CHAPTER 2/AREA 1

MUSIC HALL
RENOVATION AND EXPANSION

CHAPTER 2/AREA 1 - MUSIC HALL RENOVATION AND EXPANSION

Part A	Program Review of the Existing Building Area 1 Requirements Users Inputs to Program	page 25-36
Part B	Proposed Construction Basic Work Alternative Work Theatre Park Area Tabulations	page 37-48
Part C	Outline Specification/Scope of Work	page 49-75
Part D	Estimates of Construction Cost and Time	page 76-83

Part A

Program

REVIEW OF THE EXISTING BUILDING

General

The Music Hall covers a ground area of about 36,000 square feet, including lobby areas that connect to Tremont Street under the 14-story office building. The theatre is served by a handsome and dramatic four-level open lobby and seats 4,225 people, on a ramped orchestra floor, in second level loges, and on a single large balcony. The balcony is quite steeply raked and divided by cross aisles into first, second, and third balcony areas. A domed ceiling and other details of its 1925 movie palace era give the interior of the house its character.

Orchestra	2,215 seats
Loges	222 seats
Balcony	1,788 seats
Total	4,225 seats

Because of its very limited original requirements, when constructed in 1925, the theatre has a stage area limited in size to 32 feet in depth, 107 feet in width, and 75 feet in height.

Structure

The building is steel framed, with concrete slab floors, and concrete spread footings. Column fireproofing is masonry or concrete. Except for the stone trim at the Tremont Street entrance, the exterior walls are of red or yellow brick over structural tile backup. Interior walls appear to be generally tile with plaster. Ceilings are plaster, on suspended metal channel and lath systems.

The roof framing of the house itself consists of five steel trusses spanning longitudinally between major transverse trusses located on the proscenium and rear-wall-of-the-house lines. The balcony framing consists of trusses spanning longitudinally between the latter line and a major transverse truss located at about the midpoint of the second balcony. The balcony areas north of this transverse truss are supported by trusses cantilevered from it. None of these trusses are fireproofed. Like probably all other beam steel in the building, they are protected by suspended plaster ceilings.

For Code purposes, the building falls into Use Group F-1-A, and is Construction Class 1A or 1B.

Emergency egress is provided by exterior fire escape stairs on the east and west walls of the theatre and by doors opening to grade on the east wall. The east wall fire escapes serve 6 egress doors along the east and rear walls of the house, and lead to grade. The west wall fire escapes serve 9 egress doors along the west wall, and lead not to grade but to a depressed courtyard which leads to street level. This courtyard also serves the office building and the dressing room portion of the adjacent Wilbur theatre. It is dark, contorted in plan, open to unauthorized obstruction, and clearly a hazard.

Building Use and Condition

Entrance and Lobby Levels

Entering from Tremont Street one passes through brass doors into the outer lobby, with its original single ticket window, and through a series of ornate spaces to the grand lobby, with its three upper tiers of balconies. Three broad stairs lead from the grand lobby to the balcony levels above, and three doors, now fixed shut, lead directly from the lobby to the new pocket park south of the building. Materials are rich and florid, with a great deal of applied ornament. Floors are marble or carpet, wainscoats marble, railings and pilasters plaster deftly imitating marble, ceilings gilt and coffered. The carpet is in poor condition; the walls and ceilings, though chipped in places, would respond to careful renovation. Wherever additions have been made (a lobby fountain, counters, hardware) they have been grossly inconsistent with the previous work.

Basement Lobby, Toilets

One descends from grand lobby to basement lobby- into a vast and dismal room, low ceilinged, poorly lit, with terrazzo floor and dark wood paneling.. Adjacent rooms - coats, offices, ushers, etc. - like all the minor rooms throughout the building are dim and strewn with forgotten storage.

The main groups of toilets are located in the basement, with 4 other ladies' rooms and 3 other mens' rooms located on balcony levels. Floors and walls are tile, toilet partitions are metal or marble. The rooms are capable of resuscitation, the fixtures in many cases are still serviceable.

The number of fixtures, adequate for a movie house, is low for a legitimate theatre, which must accomodate a high impact at intermissions.

For 2000 men/2000 women:

	men			women		total sanitaries
	wc	ur	lav	wc	lav	
Dallas Fair Park Theatre	18	39	19	38	19	95
Time Saver Standards (legit. theatre)	32	24	10	32	19	88
Present Music Hall	14	18	11	30	16	62
Mass. Plumbing Code*	12	5	9	17	9	34

* Assembly use, not specifically legitimate theatres.

The House

Orchestra level is about 130ft. deep, from proscenium to rear wall. Main aisles are ramped, with seating arrayed in 43 rows. The first 21 rows are ramped, the rear 22 rows sit on 3" high steps. Seat pitch is $32\frac{1}{2}$" and average seat width 20". Seats are arrayed in five sections with access from four double loaded main aisles and two single loaded side aisles. The cross aisle, shown on the original plans, has been filled in with seating. Seats in the center section are not offset row from row, creating sightline problems.

The loges are fed directly from the lobby second level, with the movie projection booth occuring at this level. The balcony is fed by vomitories from the lobby third and fourth levels, and from a continuous rear foyer at the highest level. Balcony stepping has 12" treads, with risers varying between 8" and 10". Balcony seating is 30" front to back (Code minimum is 32"), and average 20" wide.

The orchestra pit is on a lift, though presently fixed in place by the stage extension fitted above it. All surfaces in the house are highly ornate, with columns, figures, coffered ceiling - both in real and artificial marble. Lighting is by ceiling surface-mounted fixtures, and is quite dim. The ornate surfaces - difficult to clean at best - are very dirty. The carpet and the upholstered seats are in bad repair.

Stage House

The proscenium opening is about 62ft. wide and 32ft. high, with a 6ft. forestage due to the extension built over the pit. Rear wall of the stage is 30' behind the proscenium line.

stage right is 12ft. deep, stage left is 15ft. deep (to the pinrail), and the gridiron height is about 75ft. above stage. Behind the pinrail at stage left is an overhead loading door and the stage door entrance. The front portion of the stage is on a screw lift system, which is only partially operable.

Backstage Facilities

These are at basement level, reached by stairs from stage right and left, and directly from the basement lounge. There are fourteen dressing rooms:

2 @ 100 s.f., with private toilets
8 @ 100 s.f.
2 @ 150 s.f.
1 @ 230 s.f.
1 chorus room @ 1360 s.f.
2 players' toilet rooms

The former musicians' rooms, engineers' rooms, and shops are in disuse or other use (temporary office or storage). The whole basement area is ill-lit and in poor repair. There are a number of mechanical and electrical equipment rooms, some of them now empty or given over to long forgotten stores.

Interiors in General

Original construction is solid. Present condition of the surfaces reflects the years of minimal maintenance and negligible imagination to which they have been subjected, but the basis is sound and with selective rebuilding, plus wholesale refinishing and relighting, the building can certainly be put in good condition again.

Building Exterior

The exterior appears watertight and serviceable. The old marquee on Hollis Street has been removed, and a modern canopy and vertical sign added at the Tremont Street entrance. Neither the latter construction nor the two recent box office additions are sympathetic to the original Music Hall design.

Mechanical Systems

These are archaic and therefore incapable of efficient operation and maintenance. In many cases they have been simply abandoned. Refer to Part D for a full description of existing systems.

Conditions for Performance

Functional limitations of the building consist chiefly of:

- Lack of stage depth and side room.
- Insufficient receiving facilities.
- Inadequate stage lighting and rigging systems.
- Poor condition of the dressing rooms, and their inadequate area.
- Insufficient box office facilities.

Interviews with patrons and performing groups have established that sight lines are considered poor from the loge, from the lowest rows of the second balcony, and from the rear of the orchestra level. This condition is due to inadequate floor slope and aggravated by insufficient staggering of the seats. Hearing conditions are affected at times by noise from the ventilating systems, and are thought poorest in the furthest reaches of the balcony and on the orchestra level, beneath the deep balcony overhang.

AREA 1/PROGRAM

Area 1 consists of the existing Music Hall, and the area between the Music Hall and a widened Stuart Street. The facilities to be achieved within Area 1 are those which the performing groups who may use the renovated building have agreed are necessary to produce a fi_st class facility suitable for a full range of opera, dance, and concert performances, tempered only by the physical limitations of building and site.

A further element of the program is Theatre Park, to be located at the Stuart Street/Tremont Street "100% corner", and to provide space for retail uses and means for announcement of district-wide, or even city wide, theatre events.

Program - Composite General Requirements

1. The House

   Correct acoustical and sightline problems.
   Retain, as nearly as possible, the present number of seats. Provide an optional means of temporarily reducing the number of seats to 2000-2500, (thereby improving the intimacy of the house), but at no loss in acoustical performance - in anticipation of Opera Company requirements.
   Improve the house lighting, and permit dimming.
   Provide greatly expanded potential for stage lighting.
   Permit performance systems control from the rear of the house.

2. Lobby

   Expand the box office to 3 windows.
   Provide adequate out-front office space for visiting companies.
   Improve facilities for serving refreshments during intermissions.
   Provide a function room with bar and catering capability. Ideally the room would have separate access from the street, for opening night receptions, gathering of theatre parties, and even use independent of the performance itself. (100-150 people.)
   Increase toilet facilities to legitimate theatre standards insofar as possible, and provide facilities for the handicapped.

3. Orchestra Pit

Expand to accomodate up to 90 musicians, with improved access from below.
Provide means of altering the pit proportions, by raising and lowering floor level.

4. Stage House

Increase stage depth and side space at each wing to the maximum extent possible and provide for full scenery placement capability over the expanded area.

5. Receiving Space

Provide at least 2 loading doors at stage level, with adequate sorting space immediately adjacent, and elevator access to dressing room levels. Provide off-street standing area for 2 large trailer trucks while being unloaded.

6. Rehearsal Space

Provide, if area permits, a rehearsal space about equal to stage playing area. (This was requested by only one potential user.)

7. Shop Space

Provide several small rooms for emergency repairs, wigs and costume work.

8. Dressing Rooms

Each potential user has expressed dressing room needs in different terms, and apparently assigns rooms on different bases. It appears that all users would accept the following combination of facilities:

a. Star Rooms

Each adequate for 1 to 3 persons, with private toilet and shower. (10 rooms @ 200 SF)

b. Principal/Chorus Rooms
Each adequate for 3 to 8 principals, or up to 12 chorus persons. (21 rooms @ 400 SF)

c. Ballet/Chorus/Supers Rooms
(2 rooms @ 1080 SF)

d. Orchestra Room
Locker space and lounge area for up to 90 musicians. (1620 SF)

e. Toilets and Showers
At the rate of one watercloset or urinal, and one lavatory, to 8 people, and showers at one to 10 people. (1860 SF)

f. Greenroom
Not considered necessary.

9. Storage Space

Touring companies require easily accessible storage space for costume, property and instrument trunks.

Beyond the specific needs cited above, the Area 1 program requires that all egresses and fire protection systems be brought up to Code requirements, that mechanical systems be thoroughly renovated, that inconsistent and unsympathetic latter-day embellishments be removed, and that the entire theatre be re-lit and refurbished to the level of quality expected of a modern theatre.

10. The Street Edge

To maintain the continuity of pedestrian use and visual interest along Stuart Street, it is desired to provide as much retail space along the street as theatre expansion will permit.

Theatre Park will also incorporate retail uses, - perhaps ticket sales, outdoor refreshments, books and souvenirs, or other appropriate theatre district uses. It should provide a large amount of high impact sign area, portions of which will be rented to each theatre or attraction. The sign itself, visible at some distance, is conceived as the central feature and symbol of the entire theatre district.

Program - Area 1
Specific Area Requirements/Summary of Composite Program

1.	House	maximum retention of existing seating, with optional reduction to 2,000-2,500 seats.	
2.	Lobby		
	Visiting manager	225 SF	
	Box office	325 SF	
	Function room	1,500 SF	2,050 SF
3.	Orchestra Pit		1,350 SF
4.	Stage House 70 x 136		9,520 SF
5.	Receiving Space		600 SF
6.	Rehearsal Space		1,750 SF
7.	Shop Space		360 SF
8.	Dressing Rooms		
	Star rooms	2,000 SF	
	Principal/Chorus rooms	8,400 SF	
	Ballet/Chorus/Supers rooms	2,160 SF	
	Orchestra	1,620 SF	
	Toilets, showers	1,860 SF	16,040 SF
9.	Storage		1,500 SF
	TOTAL, net area*		33,170 SF

* This area is total space to be assigned to the stated purposes, some of which will be in an addition and some in renovated existing areas.

In the cases of orchestra pit and box office, existing areas in these uses will be retained but must be augmented to raise the desired totals above.

Program - Area 1
Input to Composite Program

Boston University Celebrity Series

1. House
   Retain present number of seats. If reductions, then use 3,500 seats as minimum.
   There is a sightline problem in the seats immediately behind the First Balcony. Also in the loges.
   Stage lighting should be provided to a standard that would, in most cases, eliminate the need for touring companies to bring their own.

2. Lobby
   Lobby is adequate.
   Provide office for visiting managers 15 x 15, adjacent to that of theatre manager.
   Expand box office to 3 windows (1 - tonight's performance; 2 - tonight's or future performances; 3 - will-call or special problems).

3. Orchestra Pit
   Expand to accommodate 60 musicians.

4. Stagehouse
   Provide 50 ft. of playing depth, more if possible.
   No need for traps.
   Height adequate, needs more and better hanging capability

5. Loading Facilities
   Provide 2 (or better, 3) doors for simultaneous loading of 50 ft. long trucks, directly onto stage.

6. Rehearsal Space
   None required.

7. Shop Space
   None required.

8. Dressing Rooms
   Provide orchestra locker rooms, with separate room for conductor.
   Provide 1 or 2 star rooms.
   Provide space for 30 principals (at 2 or 3 to a room)
   Provide space for 70 chorus (in several rooms)

9. Storage Space
   Provide storage for wardrobe and property trunks.

Program - Area 1
Input to Composite Program

The Boston Opera Association, Inc.

1. House
   Retain present number of seats.
   No problem with sightlines. There is poor hearing deep under the balcony. Hearing also affected by fan noise.
   Improve stage lighting and control systems.

2. Lobby
   No requirements stated.

3. Orchestra Pit
   Expand to accomodate 90 musicians.

4. Stage House
   Provide clear depth of 70ft., with height to gridiron unaltered. Improve machinery to permit scenery placement over this entire area. Retain present stage width, minimum.

5. Loading Facilities
   Provide doors for simultaneous unloading of 3 to 4 semi-trailers, directly onto stage. Receiving space required: 600 sf.

6. Rehearsal Space
   None required.

7. Shop Space
   Provide wig and costume rooms, 2 @ 180 SF each.

8. Dressing Rooms

Provide group changing space for 90 orchestra:	1,620 sf
Provide 4 rooms for stars @ 190 SF	760
Provide 8 rooms for prinicpals @ 158 SF	1,270
Provide group dressing rooms:	
80 chorus (2 or more rooms)	2,160
40 ballet (2 or more rooms)	1,280
40 supers (1 room)	1,080

Provide toilets/showers for above

9. Storage Space
   Provide about 800sf, as part of a musicians locker area, for wardrobe trunks and instruments, plus several general purpose 300 sf. rooms.
   Provide a freight elevator with 10ft. x 20ft. x 9ft. high cab.

The Boston Ballet

1. House
   Retain present number of seats. At worst do not reduce below 4,000.
   Cites hearing problems in the loges, and sight problems in the first balcony rows.
   Find lighting presently too flat - need greater side lighting capability. Also higher level of house lighting, with dimmers and backstage control.
   Would find useful a distinctive seating area for patrons of the Ballet.

2. Lobby
   Require two windows for exclusive use during performances.
   Install a closed circuit black and white TV system to permit latecomers, retained in the lobby, to see the performance.
   Provide a function room (100-150 persons) with bar or even catering facilities. This would serve for first night and special group parties.

3. Orchestra Pit
   Expand to accomodate 65, with improved access.

4. Stage House
   Provide clear depth of 80ft., and proscenium width of 50ft. minimum. Increase side stages as much as possible.
   Locate stage manager control center in front house, with intercom to backstage.

5. Loading facilities.
   Provide 2 doors, onto stage.

6. Rehearsal Space
   They could use a 50 x 35 space if available on an as-needed basis, engaged separately from the theatre itself.

7. Shop Space
   None required.

8. Dressing Rooms
   Provide orchestra locker room.
   Provide 10 rooms for stars, each capable of accomodating 1-3 people - preferably with private toilet and shower.
   Provide 21 other dressing rooms, each capable of accomodating 8 people.
   Provide 2 chorus rooms, each sufficient for 20 people.

9. Storage Space
   Provide costume storage/repair room.
   Provide space for wardrobe trunk storage.

Part B
Proposed Construction

The following description summarizes the work proposed for Area 1. For detailed listings of the materials and systems proposed, refer to Part C: Outline Specification and Scope of Work and Alternative Work, which are separately estimated in Part D. A further element of the Area 1 work is Théatre Park, also separately estimated in Part D.

I Basic Work

1. The House

The present wall and ceiling surfaces and mouldings will be repaired and repainted, and introduction of any new elements will be carefully made to preserve and enhance the feeling of the original space. All carpeting will be replaced.

A sound and light control booth will be built at orchestra level, beneath the projection booth. This will eliminate some 70 seats.

Existing seating will be reupholstered, but the present front to back spacing, established by floor stepping, must remain. Restoration of the Code-required cross aisle eliminates a further 116 seats.

New seating capacity:

Orchestra	2,029
Loges	222
Balcony	1,788
Total	4,039

The present house lighting system will be revived, as an AC system utilizing long-life lamps on reduced voltage. The proscenium arch surrounds and the original coves around ceiling and soffit domes, will be refurbished so that the Music Hall can again appear as it was originally meant to appear. The new lighting will be capable of dimming.

Side lighting positions will be provided at each side of the proscenium, and three followspot booths will be constructed within the present attic, utilizing existing openings in the great dome.

Two lighting bridges will be installed, each incorporating sound reflector panels designed to better distribute sound to the audience and to the orchestra itself. The panels will be carefully designed to fit bridges sympathetically into the restored house. Each will provide positions for stage lighting and sound system components, permitting the front of the balcony to be kept free of stage lighting. The proscenium lighting bridge will lower to provide some 8ft. of proscenium height adjustment, and will lower as far as stage level for access.

2. Lobby

Two wall niches either side of the present box office will be opened and converted to ticket windows.

An unused portion of the vestibule adjacent to the present theatre office will be converted to a visiting company office.

The exterior loge level balcony facing the Hollis Street park will be enclosed with metal and glass construction and utilized as a refreshment area. Two other counter areas will be built at main lobby level, one for refreshments and one for coats.

Public toilets throughout the building will be thoroughly renovated, with all toilet partitions, and many fixtures, replaced. Each will be revised to accommodate the handicapped, and a new toilet for the handicapped will be built on the main floor, where no toilets exist today at all.

All surfaces throughout the multi-level lobbies will be refurbished and new carpet and new lighting installed.

3. Orchestra Pit

The present pit will be replaced by a new fixed floor pit, accommodating 90 musicians at 13.2 S.F. each, or 78 musicians at 15 S.F. each. The fixed floor will permit addition of temporary stepping. Access is afforded directly from the musicians lounge located beneath the stage.

4. Stage House and Performance Systems

All present construction north of the proscenium line will be removed and a new stagehouse built, 70ft. deep and 90ft. high to the grid.

A new proscenium opening will be built about 8ft. behind the present proscenium porch, which will be retained.

The 8ft. space will accomodate the proscenium bridge and side lighting positions, in addition to permitting orchestra pit expansion. New service stairs at stage right and left provide backstage circulation, from basement to grid iron. Side stage space is increased to 38ft., at each side. The 26 x 47 musicians' lounge below the stage is convertible to a future traproom.

The centre stage area, 70ft. deep by 136ft. side, will have a modern system full capability of stage rigging with gridiron, counterweights at stage right, intermediate galleries, curtains, markings and adjustible sound absorbing curtain. See comparative data regarding other theatres in the appendix.

A stage lighting control system is provided, capable of all normal performance requirements, as is a full set of portable lighting sources matched to the control system.

There is included a system for sound reinforcement, playback and special effects, and a system for enhancement of natural acoustics in areas such as beneath the great balcony overhang where they are presently inadequate.

A system for production intercommunication, paging, and performance monitoring is provided to extend between stage and control booth, and to necessary backstage and outfront areas.

5. Loading Facilities

Two off-street loading bays are provided at the northeast corner of the stage. A freight elevator, with 10ft. x 20ft. x 9ft. high cab, is immediately adjacent to the receiving doors.

6. Rehearsal Space

No rehearsal space is provided under the Basic Work. It could be provided under Alternative 7.

7. Shop Space

One room is provided, with more rooms possible under Alternative 7.

8. Dressing Rooms

By renovating the existing dressing rooms, utilizing all the area under the new stagehouse not necessary for mechanical services, and providing six "star" dressing rooms at an upper level to the rear of the

stage, about 80 percent of the area programmed for dressing rooms, musicians lounge and locker room, and toilets/showers can be provided.

Existing rooms will be painted, with new ceilings, lighting, and floor covering. Toilet rooms will be entirely replaced and expanded to meet modern standards New rooms will match the renovated existing rooms.

9. Storage

Storage for trunks and props is provided at basement level beneath the retail area along Stuart Street.

In addition to providing for the specific area needs described above, the proposed Basic Work includes the following elements:

A. Mechanical systems will be completely renovated and updated as required by Codes and as required to provide the conditions of comfort and utility normally expected in a first-class theatre. In specific: the partial air conditioning will be extended to include the entire public and dressing area; the mechanical systems will be isolated to eliminate sound interference with performances, and the present DC electrical service will be replaced with a new high capacity AC service. See Part D for a complete description of proposed mechanical systems.

B. Recent inappropriate additions to the building, such as the lobby fountain, outer lobby wall relief, exterior ticket kiosks, and the exterior marquee, will be removed and the areas restored in sympathy with the original architecture of the building.

C. A new enclosed steel framed stair structure will be built in the west fire exit courtyard, well-lit and clearly marked, leading to a corridor beneath the new stagehouse and an exit vomitory on Stuart Street.

D. A new and much reduced canopy and marquee will be installed, at the Tremont Street entrance, incorporating

fixed and electronically controlled sign panels.

E. About 2,000 S.F. of retail space is provided along the Stuart Street edge of the new stagehouse. The space is enclosed and furnished with basic services, with their extension into the space and all interior finish work to be performed by the tenant.

F. As the stagehouse expansion necessarily eliminates the Wilbur Theatre's property room and part of its service entrance, a new receiving dock addition is provided for the Wilbur at the southeast corner of the Theatre Park site. It accommodates one truck, as does the present arrangement, and affords direct access to the Wilbur's basement shops.

Part B
Proposed Construction

II Alternative Work

Alternative 1

Rather than 4039 re-upholstered seats, install 4039 new seats on orchestra, loge and balcony levels. Front to back spacing remains as at present.

Alternative 2

Provide a roll-down metal curtain on the line between second and third balconies, permitting temporary elimination of the 618 third balcony seats at the option of the performing group.

Alternative 3

Remove the loge completely. Raise the rear portion of the orchestra floor to provide optimum sight lines. Provide ramps and stairs and revise existing exits to afford adequate circulation and egress. Install 1930 re-upholstered seats in a conventional layout, instead of the 2029 called for in the Basic Work, at 34" front to back spacing instead of the present sub-standard $32\frac{1}{2}$" spacing. Construct a combination projection and control booth at the rear of the house, at optimum level, replacing the present projection booth.

Alternative 4

Remove the loge completely. Raise the rear portion of the orchestra floor to provide optimum sightlines. Provide ramps and two additional exits to the exterior, and revise existing exits to afford adequate circulation and egress. Install 1860 re-upholstered seats, in a continental layout with 40" front to back spacing, replacing the 2029 seats called for under the Basic Work. Construct a tier of control and projection rooms across the rear of the house, at optimum level, replacing the present projection booth.

Alternative 5

Relocate the present lower lobby entrance to the men's room and convert the smoking room thus dead ended into a function room suitable for gathering of theatre parties, opening night receptions and similar affairs. Remove the stores at either side

of the Tremont Street entrance. Convert the northern store to a function room service entrance with stair and dumb-waiter. Remove the floor of the southern store, reglaze the large arched openings giving onto the plaza, and provide a new stair and public entrance which will permit the function room to be used independently of the theatre.

Alternative 6

Substitute for the fixed orchestra pit floor a single platform orchestra pit lift, equal in area to the entire pit opening, with about 10ft. vertical travel. Surfaced to match the stage flooring, it would in its upper limit of travel form a flush extension of the stage surface.

Alternative 7

Construct a partial subbasement, below the new stagehouse, providing the dressing rooms and rehearsal space, programmed but not provided for under the Basic Work.

Part B
Proposed Construction

AREA 1/THEATRE PARK

1. Retail Space

A new retail structure, of three stories with basement, is proposed for the Theatre Park site adjacent to the new Music Hall stagehouse. It will appear as an integral part of the stepped multi-level Stuart Street edge which continues along the rear of the stagehouse and onto the Area 2 site, providing an active retail strip which will maintain the south side of Stuart Street as a pedestrian attraction and relieve the massive scale of the hundred foot high stagehouse.

The building is designed in four bays, stepped back at the second and third levels to provide terraces. Retail activity might include theatre books and souvenirs, a ticket agency, a theatre oriented cabaret and bar. The cabaret could use the terraces and a portion of Theatre Park itself for outdoor dinning in good weather.

About 7,300 gross sq.ft. of retail area is provided on the Theatre Park site proper, as shell space - that is, enclosed unfinished space to be completed by the occupant to his own satisfaction .

2. Sitework

The remainder of the site is covered in a unitpaving material, designed, as will be the lighting and park furnishings, to define Theatre Park as a distinct place. Paving will be reinforced to handle the heavy trucks serving the Wilbur.

3. Theatre Bulletin Tower

The tower, about 12ft. square and 75ft. high, is located at the very corner of Stuart and Tremont Streets. Its base consists of maps and permanent notices, with the surface above broken into six distinct sign panels on each side. A backlit translucent plastic panel, 8ft. high by 12ft. wide, is lit from within the sign structure and has ranks of external slots upon which opaque letters are arrayed - similar to a conventional theatre marquee except that the panel will tilt to permit changing the sign message and relamping the ripple lamps from inside the tower. Bands of these 14 watt lamps surround each panel and provide a 5ft. high tower cap. Another conventional marquee feature, they can be programmed to flash, ripple, or simply remain lit.

See Part E for estimated Tower operating costs.

Proposed Construction
Area 1 - Basic Work

		Program	Proposed
1.	House	4,225 seats (no change)	4,039 seats
2.	Lobby		
	Visiting Manager	225 SF	230 SF
	Box Office	325	550
	Function Room	1,500	0*
3.	Orchestra Pit	1,350	1,180
4.	Stage House	9,520	9,520
5.	Receiving Space	600	1,680
6.	Rehearsal Space	1,750	0**
7.	Shop Space	360	200**
8.	Dressing Rooms		
	Star Rooms	2,000	2,000
	Principal/Chorus rooms	8,400	6,010**
	Ballet/Chorus rooms	2,160	1,740**
	Orchetra	1,620	1,220**
	Toilet, showers	1,860	1,860
9.	Storage	1,500	1,500
Total		33,170 SF	25,880 SF

* Shortfall can be met if Alternative 5 is adopted.
** Shortfall can be met if Alternative 7 is adopted.

Proposed Construction

Comparative Data

Area 1 (Renovated Music Hall)

Use	Seats	Max-seat to Prosc.	Pit-S.F.	Musicians at SF	Prosc W x H	Stage D x W	Grid H	Rear Stage D x W x H	Side Stage D x W x H
Multi	4039	173 ft.	1180 S.F.	90 @ 13.2	60x36	70x136	90	--	70x23x30
	3718 to 3030(a)	173 ft. to 132 ft.(a)			60x28(b)				

See Appendix for similar tabulation of other new and renovated halls.

Subscripts:

(a) Under various Alternatives, See Summary of Seating Options

(b) Proscenium height with proscenium bridge in lowest position

SUMMARY SEATING OPTIONS

	Orchestra	Loge	Balcony	Total	Maximum Distance Proscenium to Extreme Seat: Orchestra	Balcony
Today	2,215	222	1,788	4,225	128'	165'
Proposed Basic Work	2,029	222	1,788	4,039	136'	173'
Alternative 3 (Orchestra Level raised-conventional)	1,930	--	1,788	3,718	123'	173'
Alternative 4 (Orchestra Level raised-continental)	1,860	--	1,788	3,648	123'	173'
Alternative 2 (3rd Balcony curtain)	2,029	222	1,170	3,421	136'	132'
Alternatives 2 + 3	1,930	--	1,170	3,100	123'	132'
Alternatives 2 + 4	1,860	--	1,170	3,030	123'	132'

PROPOSED CONSTRUCTION
Area Summary

Area 1

Ground Area

Existing building remaining	34,016	
Stagehouse addition	17,344	
Theatre Park	4,722	
TOTAL		56,082 SF

Gross Floor Area

Existing building (6 levels)	88,000	
Stagehouse addition (2 levels)	36,500	
Egress structure	5,000	
		129,500 SF
Retail Space		
Behind stagehouse	2,000	
Theatre Park	7,300	
		9,300 SF
Subbasement (Alternative 7)		10,500 SF
TOTAL: Gross Floor Area		149,300 SF

Part C
Outline Specification
Scope of Work

1. Architectural and Structural Systems

A. Demolition

Remove, or relocate if necessary, existing utilities in Dore St.
Remove existing fire escape construction in the courtyard and between Music Hall and Wilbur theatre.
Remove existing stagehouse, complete.
Remove miscellaneous recent additions: fountain, lobby wall relief, outdoor ticket booths.
Remove various interior walls, etc. to permit construction of function room, expanded box office, etc.
Remove most existing light fixtures.
Remove exterior entrance canopy and vertical sign panel.

B. Sitework

Theatre park paving: unit pavers in mortar.

C. Structure

Concrete foundation system at the new stagehouse: concrete spread footings, foundation walls and 5" slab on grade. Sheet and brace excavations, dewater, and underpin adjacent structures as required. Clay backfill and underdrainage system will eliminate need for most subgrade waterproofing.

Steel framing above grade: all Type A36. Two hour fireproofing on beams and columns only. Floor slabs to be composite design, typically $6\frac{1}{4}$" thick 110 lb. concrete on metal deck.

Gridiron: heavy subway gratings 19 lbs./SF.

Light bridges: steel trusses, suspended from overhead framing.

D. Exterior walls

Stagehouse and retail areas: brick facing and precast concrete panels, color controlled with rough form texture. Concrete block backup to create acoustical mass.

Loggia Refreshment Area: Duranodic aluminum framing, with glass or panel infill, similar to greenhouse construction.

Egress doors, roll up loading doors: painted steel.

Existing doors: refurbish as necessary. Replace all egress hardware to provide building security as well as afford proper egress.

Function room entrance: reglaze existing openings with large single lights in Duranodic aluminum frames.

Repair work: point and caulk wall areas most in need of repair. Repair remaining fire escapes as needed.

Marquee: 12 ft. deep by 40 ft. long in plan, steel cantilever truss framed, with roofing and coffered metal soffit. Fixed internally illuminated sign panel along the long face with electronically controlled, internally lit sign panels at each end, perpendicular to traffic.

Enclosure at new egress stairways: panels on light metal framework, secure and weatherproof.

E. Roof Finishes

Built-up asphalt and gravel roof, over 1½" insulation board. Metal counter flashing. Smoke vents as required by Code - those at the stagehouse to have sound attenuation provisions.

F. Interior Partitions

Existing: Patch plaster as needed, including moldings and applied decoration.

New: 3 hour concrete block with 3 hour fire rating around theatre, stagehouse and egress passages. Other interior areas to be steel stud and gypsum board, with double studs, sound deadener board, etc. where required for sound attentuation.

G. Interior Finishes

Lobbies and public stairs:

Ceilings and walls: clean existing marble. Paint all plaster with careful second color painting of selected moldings and ornament. Refinish carved woodwork.

At loge level arched openings: remove wood muntins and reglaze with large mirror panels. At openings giving onto the balcony refreshment area the panels to be sliding mirrored doors. At lower lobby wall niches, install mirrors.
Floor: Pirelli heavy duty rubber flooring in outer ground floor lobby, otherwise new carpeting.
Railings around lobby opening: replace existing with new polished brass and tempered glass railings.

Auditorium:

Ceilings and walls: clean existing marble. Paint all plaster, with careful second color painting of selected moldings and ornament.
Floor: new carpet replacing old.
Railings at pit and balconies: polished brass.

Public Toilets:

Ceilings: paint existing plaster
Walls and floors: patch ceramic tile to match existing.

Stagehouse:

Ceilings and walls: painted structure.
Floor: resilient wood flooring, with potential for future traps, leading to the orchestra locker room below stage.

Dressing Area: Rooms and Corridors

Ceilings: suspended acoustical tile.
Walls: painted gypsum board or concrete block.
Floor: vinyl asbestos tile.

Dressing Area: Toilet/Shower Rooms

Ceilings: painted gypsum board.
Walls: epoxy painted concrete block, or ceramic tile.
Floors: ceramic tile.

Storage and Mechanical Rooms, Egressway:

Ceilings: unpainted structure.
Walls: unpainted concrete or block.
Floors: hardened concrete.

Retail Space:

Ceilings: unpainted structure.
Walls: unpainted concrete or block.
Floors: hardened concrete.

H. Vertical Transportation

Existing passenger elevators to be refurbished.
Freight Elevator: 10 x 20 cab, 9 ft. height.
Dumbwaiter serving function room: 3 x 3, motorized.
Interior egress stairs; metal pan with concrete fill, pipe handrails, painted.

I. Specialties and Casework

Seating: new upholstered self-lifting seats, spaced 20" to 21" apart and pitched $32\frac{1}{2}$" front to back in the orchestra, and 30" front to back in the balcony (i.e. pitched at the present spacing).

Under Alternate A2: same seats, but the front to back pitch on the orchestra level only changes to 40" continental spacing.

Toilet Areas: replace all toilet partitions with new baked enamelled metal units. Replace toilet accessories and mirrors as needed.

Counters: plastic laminated, hardwood trim to match existing interior wood.

Building Graphics: New directional, room identification and special signing throughout. New exterior signing and new poster cases at lobby.

J. Theatre Park Signpost: 12' x 12' x 75' high steel framed tower with internal vertical circulation and equipment room. Internal high efficiency lamps illuminate the entire translucent face area on all four sides. Additional flashing series lamps occur at tower cap and perimeter. Sign face panels tilt to permit changing of copy and relamping from the tower interior. The lower 10 ft. of the tower height consists of porcelain enamel maps and other information.

2. Performance Systems and Equipment

A. Orchestra Pit Lift/Music Hall (Alternative 6)

1. Functions:

a. Height adjustment of orchestra pit area:

Orchestra pit level variable to suit performance.
Floor at audience level.
Extended forestage level, variable height, for performance, assembly, lecture.

2. Components:

a. Lift mechanism: oil-hydraulic, screwjack or scissors.

b. Platform (floor): match stage floor material, finish, resilience.

c. Control, signal lights, electrical and mechanical safety interlocks and stops.

d. Protective skirts, removable railings as required at various levels.

B. Stage Rigging/Music Hall

1. Functions:

a. Hanging, shifting, soring of scenery, curtains and masking, overstage lighting equipment.

b. Vertical and horizontal operation of house curtain.

c. Operation of elements to adjust size of proscenium opening.

d. Operation of fire curtain, if practical and required (alternates possible, may be required by OSHA standards, industry conditions).

e. Support and storage of projection screen.

2. Components:

a. Single-purchase counterweight sets nominally 6" o.c. full depth of stage, each 1200-1500 lb. capacity.

b. Special, larger capacity sets for permanent heavy loads, house curtain, etc.

c. Spot lines and hand rigging equipment for individual show items, when required.

d. Tracks, swivel arms, etc., for stage masking curtains.

e. Special pick-up rigging, etc., for overstage lighting.

f. Electric winch-operators for heavy special items.

g. Locking rails, pin rails, winch-control stations, etc.

C. Stage Curtains and Maskings/Music Hall

1. Functions:

a. Fire curtain: automatic fire separation between stagehouse and auditorium. Alternate (drencher pipe for water curtain) may be acceptable. May be required if typical asbestos fire curtain not available due to OSHA-asbestos industry controls.

b. House curtain: visual separation between performance and audience; intermissions, before and after shows.

c. Stage masking curtains: neutral, variable enclosure and background for performance, events, assemblies.

d. Sky drop (cyclorama): sky effects, scenic effects projection, etc.

e. Projection screen: motion picture and slide showing.

f. Proscenium maskings: change size of opening as required by individual performances, events.

2. Components:

a. As listed above.

b. Stage masking curtains include bi-part traveler curtains, top-masking borders, slide-masking curtains and legs, semi-transparent scrims. Quantities, sizes depend on project development.

D. Adjustable Curtains/Music Hall Auditorium

1. Functions:

a. Partial adjustable control of auditorium space and environment to meet specific performance needs.

2. Components:

a. Curtains, per project design development.

b. Tracks: motor operators, winches rigging, as required.

c. Motor controllers, limit switches, etc., as required.

E. Movable Light Bridges and Rigging/Music Hall

1. Functions:

a. Variable adjustment of proscenium height.

b. Conforming adjustment of lighting positions.

c. Conforming height adjustment of sound reflecting panels at top of proscenium.

d. Possible conforming adjustment of sound reinforcement loudspeaker cluster. To be determined in project development.

e. Rapid, economical adjustment and service of major performance lighting equipment for individual productions, by lowering to stage level.

2. Components:

a. Bridge framing: walkway, safety and light-mounting rails, support framing for sound reflecting panels and facing on auditorium side.

b. Rigging, counterweights, guide tracks, motor-winches.

c. Control, limit and safety switches and indicators.

F. Auditorium Lighting Control/Music Hall

1. Functions:

a. Fade-out and fade-in of auditorium lights for smooth transitions to and from performance.

b. Selective control and balance of auditorium lighting by area and level.

c. Similar control and balance of accent lighting in auditorium.

2. Components:

a. Remote-controlled electronic dimmers, switching and power control equipment.

b. Operating dimmer and switch controls, selector and indicating components.

G. Stage Lighting Control and Distribution System Production Control, and Accessory Equipment/Music Hall

1. Functions:

   a. Visually and artistically effective control of performer lighting.

   b. Control of special lighting effects.

   c. Control of scenic and background projection.

   d. Similar lighting control for assemblies and events.

   e. Recording, storage and recall of complex multi-dimmer cues (specific lighting combinations) required for individual productions.

   f. Selective switch and/or dimmer control of "backstage" and service area worklights.

   g. Provision of power and lighting circuit access for visiting company control equipment ("road boards").

   h. Coordinated control for interrelated performance systems and equipment.

2. Components:

   a. Connector strips and plugging boxes over stage, at auditorium ceiling catwalks, lighting bridge and sidewall lighting locations.

   b. Cross connect panel for variable connection of load circuits to dimmers.

   c. Remote-control electronic dimmers, switching and protective control components.

   d. Operating control console, multi-channel switch, dimmer and store-access controls for cueing and operation of stage lighting.

   e. Memory components for storage and selective playback of multi-channel (multi-dimmer) lighting cues preset to performance requirements.

   f. Visiting company panel with power section for "road boards" and plugging section for access to permanent stage lighting circuits.

   g. Backstage production control panel for control of worklights. Typically provides space for auditorium light control station, lift and rigging controls, etc.

h. Stage manager's console (desk) for overall performance control.

i. Footlights and any other permanently installed performance stage lights.

H. Stage Lighting and Accessories (Movable Fixtures)/ Music Hall

1. Functions:

a. Optically adjustable, portable light sources to provide variable range of source characteristics to meet specific performance lighting needs.

b. By location, and dimmer and switching control, performance variation of color, direction and visual characterof stage lighting.

c. Strip lights, floor lights: board area illumination.

d. Spotlights: specific hard or soft edged general or directional lighting of performance areas. Accent lighting of performers or visual elements.

e. Follow spotlights: individual operator-controlled movable accent lighting for individual performers or groups. Moving light effects.

f. Pattern and optical projectors: visual effects, including patterned illumination; visual backgrounds and effects.

2. Components:

a. Lighting instrument (fixture) types per above.

b. Auxiliary color media and frames.

c. Auxiliary beam control devices (hoods, barn doors, etc.)

d. Hanging clamps, mounting brackets, stands, etc.

e. Extension cables, portable power and plugging devices.

f. Initially installed lamps.

I. Sound Reinforcement and Sound Effects/Music Hall

1. Functions:

   a. High quality reinforcement of speech and sound for performances, lectures, assemblies, and other events.

   b. Enhancement of natural acoustics for seating areas where natural acoustics are unsatisfactory.

   c. Playback of recorded material which is part of a performance event.

   d. Amplification and sound distribution for electronic music and electronic musical instruments.

   e. Playback of performance sound to onstage and "backstage" performers.

   f. Archival recording of assemblies and events.

2. Components:

   a. Central loudspeaker cluster.

   b. Additional fixed loudspeakers for enhancement and performance effects.

   c. Portable loudspeakers for variable sound-source location to suit performance needs.

   d. Fixed and portable microphones for pickup of "live" sound.

   e. Tape recorder-reproducers and disc reproducers.

   f. Multi-channel amplification, corss-connection and and control components.

J. Production Communication, Monitor and Page Systems/ Music Hall

1. Functions:

   a. Production communication: effective, uninterrupted cueing, operating and set-up communication between stage managers, directors and designers and technicians installing, adjusting or operating performance systems and equipment. Includes separate communication channel between stage manager and house manager.

   b. Performance monitor: transmission of audible

stage sound to dressing rooms and related areas so that performers and technical staff may follow progress of performances, rehearsals and events. Similar transmission to selected lobby, public and office areas for late arrivals and front-of-house staff.

c. Back Stage Paging: individual and area paging in dressing rooms and related areas.

d. Lobby Paging: paging of audience members during intermissions. Paging of performers or staff who may be in public areas during rehearsals.

2. Components:

a. Production Communication: portable handsets, headsets, loudspeakers. Plug-in (jack) stations in all working areas. System amplifier and control components.

b. Monitor: microphone pickup at selected locations. System amplifier and control components. Loudspeakers in all monitor locations.

c. Page: paging microphone at stage manager console for backstage paging, at box office typical for lobby paging. Systems amplifiers and control components for backstage and for lobby. Loudspeakers in all paging locations.

3. Plumbing and Fire Protection Systems

A. Existing Systems Description

1. General: All work is of 1924 vintage, including equipment and plumbing fixtures.

2. Domestic cold water system consists of two 4" valved supplies into basement from Dore Street (north side) and Hollis Street (south side), each supply provided with a 4" compound meter; two 4" valves at meter and interconnected by a 4" uninsulated basement ceiling cross connection supply main, with cold water piping continued to the two domestic hot water heaters, all plumbing fixtures and HVAC equipment as required.

3. Domestic hot water system consists of 2" hot water supply from two domestic hot water heaters in existing boiler room to all plumbing fixtures. Presently no hot water is provided to public toilets. Approximately 50 percent of all lavatories (50 years old) in public and dressing area toilet rooms have inoperative faucets.

4. Sanitary drainage system consists of a 6" high level gravity system (all floors above basement level) entering Dore Street sewer (from northwest corner basement area) which picks up a 5" ejector discharge from two 15 H.P. sewage ejectors in 12' diameter recessed cast iron pot which picks up gravity sanitary system from all basement level plumbing fixtures and floor drains.

5. Storm drainage system consists of a 10" high level gravity system (entering Dore Street sewer adjacent to existing 6" sanitary sewer connection) which accommodates all roof drains in existing structure.

6. Vacuum cleaning system (non-operative) consists of central system containing dirt tank and vacuum pump (in basement pump room) connected to vacuum piping system continuing to 58 vacuum outlets in structure as follows:

Basement	-	5 outlets	- Lounge Areas
Orchestra	-	23 outlets	- Lounge and Seats
Loge	-	10 outlets	- Lounge and Seats
First Balcony	-	6 outlets	- Lounge and Seats
Second Balcony	-	3 outlets	- Lounge and Seats
Third Balcony	-	12 outlets	- Lounge and Seats

7. Plumbing fixtures consist of the following at Basement Level public lounges and dressing rooms:

42 W.C.; 21 UR.; 39 LAV.; 4 SH.: 2 S.S.

In upper levels all plumbing fixtures (public toilets):

Orchestra	- 2 W.C.; 2 LAV.; 1 EWC.
Loge	- 5 W.C.; 3 U.R.; 6 LAV.; 1 S.S.
First Balcony	- 6 W.C.; 3 UR.; 6 LAV.; 1 S.S.; 1 EWC.
Second Balcony	- 3 W.C.; 3 LAV.; 1 S.S.
Third Balcony	- 4 W.C.; 2 UR.; 3 LAV.; 1 S.S.

NOTE: Approximately 50 percent of all fixtures require replacement of fixture or extensive replacement parts including showers, lavatories or lavatories pedestal bases, faucet fittings, traps, closets, urinals, seats or flushvalves.

8. Fire protection water supply system (for fire standpipe and sprinkler systems) consists of 5" supply from Dore Street, 4" supply from Hollis Street, two 6" wet pipe sprinkler alarm valves (north and south

sides); two 4" x $2\frac{1}{2}$" x $2\frac{1}{2}$" siamese connections (north and sides) and one 5" fire line basement ceiling cross connection supply main with one 4" fire standpipe supply (north side basement) connected to all $2\frac{1}{2}$" fire department connections in building.

9. The 6" alarm valve (north side) provides a 5" sprinkler supply to all existing exposed stage area sprinklers (including proscenium arch, the fly galleries - east and west, stage grid level and stage roof level), also a 6" sprinkler supply to basement ceiling areas under auditorium (exposed and concealed of upright and pendant heads).

10. The 6" alarm valve (south side) provides a 4" sprinkler supply to all existing sprinklers located in Hollis Street end of building above basement level (toilets, storage, function rooms and attic) also a 6" sprinkler supply to basement ceiling areas (south ends) with exposed and concealed systems of upright and pendant heads.

11. $2\frac{1}{2}$" fire department connections are located in basement level (6); stage area, 2 on 3 levels (6); also south end of building adjacent lounges and lobbies, namely 2 on all 6 floors (12), totalling 24.

B. Demolition

1. General: Existing stage structure from existing proscenium arch to Dore Street stage wall will be removed including basement. New stage and basement areas will be extended approximately 100 feet to Stuart Street property line with removal of Dore Street and existing underground utilities, namely storm, sanitary and water supplies.

2. Remove Dore Street 4" domestic cold water supply including piping, valves, meter and 4" cross connection from street connection to proscenium arch and 2" cold water supply to existing hot water heaters. Disconnect gas supply to existing summer hot water heater and plug at building wall adjacent to Dillaway Street.

3. Maintain existing 4" basement ceiling cross connection and Hollis Street 4" supply with compound meter, valves and piping as installed. Remove all branch hot water and cold water piping to existing plumbing fixtures and equipment. Stockpile all removed hot and cold water piping, valves and faucets for disposal by Owner.

4. Remove Dore Street 6" sanitary and 10" storm connections from street sewers back to proscenium arch (including 5" ejector discharge). Maintain interior existing storm drainage system to existing roof drains. Maintain interior existing sanitary soil, waste and vent system to existing toilet rooms to remain. Remove soil, waste and vent piping in toilet rooms to be removed in basement level dressing rooms and ushers room with total fixtures as follows:

    10 W.C.; 6 UR.; 12 LAV., 3 SH.

5. Remove existing sewage ejectors and ejector piping and controls in ejector room.

6. Remove existing vacuum tank and turbine pump and controls in basement pump room. Remove 58 vacuum outlets in existing lounges and seat areas (all 6 floors).

7. Remove existing plumbing fixtures from:

    (1) Toilet room roughing to remain
    (2) Toilet rooms to be removed.

    (Total 62 W.C.; 29 UR.; 59 LAV.; 6 S.S; 4 SH.; 2 EWC.

8. Remove Dore Street 5" fire line-sprinkler supply including piping, valves, alarm valve, siamese and 5" fire line cross connection from street connection to proscenium arch, including 4" F.D.C. standpipe, 5" and 6" sprinkler mains and branch piping and sprinkler heads in existing stage areas (all levels) also in 40' x 80' basement locker - dressing room area to be modified. Stockpile all piping valves and fittings for disposal by Owner.

9. Maintain existing 5" fire line-sprinkler basement ceiling cross-connection and Hollis Street 4" supply with 6" wet pipe alarm valve, 4" sprinkler main and 6" sprinkler main to existing sprinklers (all floors - south end). Maintain Hollis Street siamese connection to above ground exterior 4" x $2\frac{1}{2}$" x $2\frac{1}{2}$" siamese which must be repaired or replaced under new work.

10. Remove all F.D.C. standpipes in stage area. Maintain existing fire line supply to all $2\frac{1}{2}$" fire department connections elsewhere in building -- all floors. Remove all existing F.D.C.'s for replacement under new work.

C. Existing System Renovations and New Work

1. All existing piping systems to remain (namely, basement cold water supply main and cross connection; above ground sanitary soil, waste and vent piping; building storm drainage piping; building vacuum cleaning piping; fire protection supply mains and branches to sprinkler heads and fire department connections) shall be checked, repaired as required and tested in conformance with Boston Plumbing and Fire Protection Code requirements before connecting same to new work.

2. Provide new 4" domestic cold water building supply main from existing 50 p.s.i. Stuart Street water main including street connection, valve and valve box, building entrance piping to new bronze compound water meter (280 g.p.m.) with continuation to existing 4" basement cross-connection and to a new domestic cold water booster duplex pumping system (synchroflow or equal) located in new basement mechanical room below new stage area to provide 30 p.s.i. pressure at top floor plumbing fixtures. Provide new valved cold water piping to all fixtures and HVAC equipment including all piping, fittings, valves, hangers, insulation and specialties as required.

3. Provide new domestic hot water system with 2 new domestic hot water, 5 p.s.i., steam fired heaters in new mechanical room (2 @ 500 g.p.h. - 40 to 140° F. - coils in 2 @ 700 gallon, cement lined storage tanks - P.K. or equal). Provide new valved hot water and hot water return piping to all plumbing fixtures including hot water circulation pump and controls, including all items as for cold water.

4. Provide new 8" sanitary building drain to Stuart Street sewer including connections to existing 6" gravity sanitary drain from upper floor fixtures and to existing 5" ejector discharge piping. Provide new duplex sewage ejector assembly and controls in existing ejector pot. (2 @ 15 HP units). Provide new sanitary above ground and below ground soil, waste and vent systems for 4 new dressing area toilet rooms; for new small "star" toilet rooms; for new orchestra level "handicapped" man and women's toilet rooms; for new basement food service equipment; for new loge level bar equipment; for new urinals and lavatories added in existing basement lobby; men and women's

toilet rooms. Provide 12 new 4" floor drains in new basement areas as required. Provide new sprinkler A.V. 8" x 6" drain connection.

5. Provide new 15" storm building drain to Stuart Street sewer including connection to existing 10" gravity storm drain from existing roof drains. Also provide new interior insulated storm drain system for new stage area structure and retain area between existing proscenium arch and Stuart Street property line. Connect new roof drain systems to new 15" storm drain in new stage area basement.

6. Provide new central vacuum cleaning equipment, namely, dirt tank, vacuum pump, controls and interconnecting pipe and valves in existing basement pump room. Provide 58 new vacuum outlets on existing vacuum piping systems in existing lounges and seating areas (all 6 floors) as required.

7. Provide new plumbing fixtures in existing toilet rooms to remain, (all floors) connecting same to existing soil, waste, and vent roughing and carriers; also providing new hot and cold water piping as required. In basement levels replace 29 W.C., 13 UR., 27 LAV., 1 SH., 1 SS. In 5 upper floors replace 23 W.C., 8 U.R., 23 LAV., 4 SS., 2 EWC.

   a) Note: All toilet room accessories for all new plumbing fixtures will be provided by others installed by Plumbing Contractor.

8. Provide new plumbing fixtures with complete new roughing in new and existing toilet rooms as follows:

   a) Basement Levels: Men, Women, Star New Toilet Rooms - 32 W.C., 6 UR., 34 LAV., 32 SH., 4 S.S., 4 EWC.

      Also existing lobby toilets - women - 3 LAV.

      Also existing lobby toilets - men - 6 UR., 9 LAV., 1 SS.

      Also new food service area - 2 kitchen type SS sinks.

   b) Orchestra Level: Handicapped men, women - new toilet rooms 6 W.C., 6 LAV., 1 EWC.

      Also new retain areas 4 W.C., 4 LAV.

c) Loge Level: New bar area - 3 SS. barsinks.

9. Provide new 8" fire protection standpipe-sprinkler building supply main from existing 90 p.s.i. Stuart Street water main including street connection, valve and valve box, building entrance 8" valved piping to existing 5" fire line cross connection (at existing proscenium arch cut off point). Also to new 6" wet pipe alarm valve with Stuart Street 6" x $2\frac{1}{2}$" x $2\frac{1}{2}$" siamese connection (located in new basement mechanical room). Also provide 6" F.L. to new fire pump, jockey pump installation in new basement mechanical room. Provide monitor switches on all F.P. valves.

10. Provide new sprinkler systems in new stage area construction including new basement area; revised 40' x 80' existing basement area; new proscenium arch area, new fly gallery areas; below new stage high grid area; below new stage roof; in new mercantile areas. All new sprinkler systems shall include valves, piping, supports, sprinkler heads, flow indicators and monitor switches, and inspector's test connections as required.

11. Provide new fire pump-jockey pump installation for new and existing standpipe piping in new and existing portions of the structure. Pump shall provide 65 p.s.i. at roof and be 1000 g.p.m.- 40 ft. T.D.H. - 40 HP with 25 G.P.M. jockey pump including U.L. approved control cabinets, piping monitor switches, F.L. siamese Stuart Street (6" x $2\frac{1}{2}$" x $2\frac{1}{2}$") and similar sized fire pump test connection with hose cabinets; all equipment in new basement stage area mechanical room. Connect new fire pump discharge header to existing 4" fire line supply for building south end F.D.C.'s - also to new standpipe system for new stage-mercantile areas, with 3 @ 4" standpipes in stage area, each standpipe containing 4 @ $2\frac{1}{2}$" F.D.C.'s at basement, stage, fly gallery and grid levels. Provide roof hydrant with hose cabinet. Provide new $2\frac{1}{2}$" F.D.C.'s on all existing fire line standpipes which remain in existing areas of structure, namely basement (4); orchestra lobby (2); 1st, 2nd, 3rd and balcony lobbies (2 each level).

4. Heating, Ventilating and Air Conditioning Systems

A. Existing System Description

1. General:

The Theatre was designed to be air conditioned and heated by means of three ducted, low pressure central station air systems with terminal reheat. The systems are identified as the Orchestra, Balcony and Lobby system. A supplementary heating system consisting of radiation or convectors has been provided at entries, lobbies and at outside walls.

2. Steam Supply System:

A high pressure steam boiler plant, located at the Northeast corner of the Basement, was abandoned in the 1950's and a Boston Edison steam service was installed to provide steam to the Theatre, the attached office building and to the adjacent Wilbur Theatre. Metering of the steam to these facilities occurs in the Basement under the present stage area.

3. Refrigeration System:

An ammonia refrigerant, chilled water plant is installed, though presently non-operative, in the Basement Mechanical Room. A chilled water and a City water piping system are connected to combination bare pipe air to water-heat heat exchangers and air washers that are installed in a portion of three built-up A/C system plenums.

In the Lobby A/C system supply plenum, an extended surface, air to water heat exchanger has been installed in place of the partially dismantled, bare pipe air to water heat exchanger and air washer that was originally installed. This finned tube heat exchanger is connected by a supply and return piping system to two "Carrier" 125 ton, F-12 packaged water chillers which were installed in 1959. The cooling tower for the condenser water portion of this system is installed on the roof. This system, which primarily serves the Lobby and Mezzanines above the Lobby is the only one which presently can provide conditioned air to the Theatre.

4. Air System Heating:

Heating capabilities within the three A/C systems

is provided by means of "Vento" heaters. These heaters consist of two vertically mounted sections of steam supplied cast iron radiation separated by a single bladed damper section which is designed to function as an air bypass damper to the heater. Each A/C system is provided with a preheater unit installed at the inlet to the unit casing and a reheat unit installed after the cooling coils at the end of the coil casing adjacent to the fan section of the plenum.

Controls for these heaters are no longer functioning. The heating system is presently controlled by manually opening and closing the main steam supply valve located at the Boston Edison Company steam service connection at the steam header in the Boiler Room.

5. Supply Air Systems:

The supply air system located in the Basement of the Music Hall consists of three ducted air handling systems, each with a separate supply air fan having a capacity of 54,000 CFM at $1\frac{1}{4}$" total static pressure. Each fan is an 84" wide DWDI centrifugal with forward curved fan blades and is presently belt driven by a 230V DC, 26 HP, electric motor rated at 1025 RPM. Each fan has an 8" diameter motor drive sheave and a 36" diameter fan drive sheave. The Orchestra system fan and the Lobby system fan are operable; the Balcony system fan is inoperable due to a damaged motor.

6. Return/Exhaust Air Systems:

There are three primary combination return/exhaust air fans, ducted to remove air from the Orchestra, Balcony and Lobby areas. The fans for these systems are located in fan rooms at the roof level of the Theatre. Each of these three air systems has the capability of either returning or exhausting up to 100 percent of the air in each system. Exhaust air dampers and louvers are located in the walls of the separate fan rooms; recirculated air is returned to the Basement supply units through an air shaft which functions as a combination outside air/return air duct. None of the return air fans are presently operable due to burned out motors. None of the return, exhaust or outside air dampers are operable due to extensive damage that has occurred to the damper blades and controls. The exhaust air dampers are closed and the outside air damper is open.

A 5 HP, 230V, DC direct drive exhaust fan with a capacity of 14,000 CFM at $1\frac{1}{4}$" S.P. is ducted to all toilets, storage, dressing and equipment rooms in the Basement. Exhaust air from these spaces is ducted to a wall louver located in the South wall of the Basement. The exhaust fan is non-operative due to a burned out motor.

A public toilet exhaust fan with an approximate capacity of 18,000 CFM is located in the roof level Mechanical Room and is ducted to the public toilets Lounge located at the Lobby (South and East) end of the Theatre. The discharge from this non-operative fan is through the South end of the building wall at the roof level.

7. Steam Condensate System:

The steam condensate system, as originally installed, consisted of a condensate receiver with duplexed condensate vacuum pumps located in in a Basement Mechanical Room, a condensate collection system common to all heating coils, radiation and convectors in the Theatre and adjacent office building and a discharge piping system connected to the high pressure boilers. The system was modified when the boilers were disconnected and all condensate presently is discharged to the sewer system through the sewage sump pit, which acts as a condensate cooling system. The condition of the condensate piping in several areas throughout the building appeared to be very poor in that leaks were evident and insulation had been damaged by previous leaks.

8. Temperature Control Systems:

A pneumatic system of temperature control had been installed during the initial systems installation. At the present time there are no known operable portions of the existing system remaining.

A system of pneumatic controls was installed in 1959 in conjunction with the installation of the packaged water chiller and chilled water cooling coil in the Lobby air conditioning system. This system consists of a thermostatically operated three-way control valve in the condenser water system which operates in conjunction with the cooling tower fan control. A small air compressor provides a source of control air for these control devices.

B. Renovations Required in Existing System

1. Fans:

The fan motor drives, for the supply and return air fans in all three primary A/C systems must be replaced with A/C powered motors. Fan and motor sheaves and fan belts must be replaced with elements that will provide identical fan operating speeds.

The motor drive, belt, and sheaves for the toilet exhaust fan must also be similarly replaced.

The direct drive motor for the Basement exhaust fan must be replaced with an indirect drive motor, belt and sheaves.

2. Refrigeration and Cooling System:

Cooling coils must be installed in air handling systems one and two serving the Orchestra and Balcony areas.

A chilled water plant of 400 ton capactiy must be installed to provide the cooling capacity required in the two systems requiring cooling. The system will consist of two 200 ton packaged centrifugal water chillers, chilled water and condenser water pumps, a 400 ton roof mounted cooling tower and the necessary interconnecting piping and controls.

3. Heating Systems:

A new Boston Edison steam service will be required to replace the existing service that must be relocated due to the proposed reconstruction of the stage area. The new service will enter the building from Stuart Street at the rear wall of the new construction and be piped to the existing steam distribution system.

New steam control valves must be installed in the existing piping system at all heating coils, radiation convectors and fan coils. New steam traps will also be required at all heating equipment. All existing traps in piping must be replaced.

The existing vacuum condensate return pumps and receiver must be removed and replaced with new duplexed condensate pumps and receiver.

The existing condensate piping must be checked and replaced in areas where the piping is leaking or shows signs of corrosion.

A new condensate cooling system must be installed adjacent to the existing condensate pumps and the discharge piped to the sewage discharge sump.

4. Temperature Control:

All existing return air, outside air and exhaust air automatic control dampers must be removed and replaced with new dampers and damper actuators.

The existing dampers and damper actuators which comprise a part of the "Vento" heaters installed preheat, heating and reheat coils are to be removed and replaced with new dampers and damper actuators.

A new pneumatic automatic temperature control system, including compressors, thermostats, sensors, transmitters, indicators and a central control console with temperature and status indication and remote starting and stopping capabilities for all equipment must be installed. The central console will be located in the Basement Mechanical Room.

Fire and smoke detectors must be installed in all existing supply return and exhaust air systems. Fire and smoke control of all systems will be in accordance with the code requirements of the City of Boston.

5. Fire Dampers:

Automatic fire dampers must be installed in all existing ducts where ductwork penetrates fire rated walls, floors and shafts. Access doors in both ducts, partitions and walls must be installed to provide access to the fire dampers.

C. Demolition Work

1. All piping, smoke breeching and equipment in the existing Boiler Room must be dismantled and removed.

2. The existing abandoned ammonia refrigeration system, including the compressor, receiver, condenser, pumps and piping in the Mechanical Room, the piping to the A/C unit casings and the air washer/cooling coils piping within the casing is to be removed.

3. The existing vacuum condensate pumps and receivers are to be removed.

4. The existing automatic control dampers throughout the system are to be removed and the existing outside air, return air and exhaust air louvers are to be removed.

5. Existing, inoperative control system components are to be removed.

6. The existing Basement exhaust ducts, grilles and registers in the Dressing Rooms and toilets in the renovated area to be removed.

7. The existing steam pressure reducing station steam flow meters and piping to the existing building heating systems is to be removed.

8. Remove existing steam radiation and enclosures located in front of main entry lobby doors.

D. New Work

1. New systems of supply and exhaust air ductwork, grilles and registers are to be installed in the new and renovated Dressing Room area in the Basement. A new 10,000 CFM, ten zone supply air duct system will be connected to a branch of the existing supply ductwork from A/C-1 serving the Basement and Orchestra area of the Theatre.

2. New steam reheat coils and a system of steam supply and condensate return piping will be connected to the ten Dressing Room area reheat coils.

3. Exhaust ducts will be connected to the existing exhaust duct system.

4. A new two-stage steam pressure reducing station and three new steam flow meters are to be installed in mechanical space to be provided in the new stage area Basement. Steam service to the existing Theatre, Office Building and Wilbur Theatre steam supply piping will be provided.

5. A new stage area exhaust system will be provided. System will consist of roof mounted exhaust fan, to be controlled both manually and by stage mounted fire or smoke detectors.

6. Provide new concealed, ceiling hung, steam heated, fan coil units in renovated entrance area.

7. Provide new radiation and fan coil system in renovated area adjacent to main entry, connect to existing steam supply and condensate piping in ceiling at Basement Lobby. Revise existing piping in this area to allow construction of new basement egress stairs.

8. Provide new supply and return air duct system for renovated Lobby areas and connect to existing supply and return air duct system. Install new steam reheat coils and provide required piping and controls for three new zones in Lobby area.

5. Electrical System

A. Existing Conditions:

1. Electrical service is now 110/220, 3-wire, DC from 3000 amp service entrance on the Hollis Street side of the building. Service appears to originate at Tremont Street. Two distribution boards serve the theater; one for the stage loads only and one for the house and mechanical loads. A small 277/480 volt service enters from Tremont Street to serve two chillers and the office building. The office building is also served by a small DC circuit from the theater distribution board for exit lights and stairway lights only.

2. Stage lighting control panel is DC, located in the freight entrance wing of the stage. Solenoid controls and contractors are located in a room in the basement. Additional DC control boards are rented as needed for additional dimming and control of stage lighting.

3. All mechanical equipment with the exception of the two chillers mentioned above have DC motors with rheostat speed controllers located near the motors.

4. There is no manual or automatic fire alarm system in the theater. A municipal type pull box is located adjacent to the stage lighting control board but is labelled inoperative.

5. Existing exit lighting is by means of back lighted exit lights with stained glass faces. There is no emergency lighting system or alternate service for exit lighting.

6. There is telephone service to the theatre but the location of its entry to the building has not been determined.

7. Lighting in the theatre auditorium is by means of aisle lights and incandescent lamps located in coves in the ceiling and around the proscenium arch and wall niches. All lighting in this area is indirect. Lighting in the lobby areas is incandescent utilizing chandeliers, wall mounted brackets and ceiling mounted fixtures.

B. New Work - Area 1

1. Completely new AC secondary distribution system will be installed. Service entrance will be located in a new vault to be built under the new loading dock. Primary wiring will be brought to the vault underground in a duct bank to Stuart Street or Washington Street. Primary duct bank will be part of the work. Primary cabling and transformers will be provided by the Boston Edison Company. Incoming secondary voltage will be 480/277V, 3-phase, 4-wire.

2. Main secondary switchboard will be located in the basement of the new stagehouse adjacent to the transformer vault. Power will be distributed to 480-208V/120Vstep-down transformer to a 208V/120V 3-phase, 4-wire stage switchboard for distribution to stagehouse loads. All existing wiring from existing DC distribution rooms to branch panels and motors will be removed. Existing conduits will be reused for new AC distribution system whenever possible. All existing conduits not being reused will be cut back and sealed off. New distribution wiring shall be sized for the load served and shall be copper conductors with THW insulation.

3. Existing exit light circuits and service for office building will be transferred to a separate service.

4. New manual and automatic fire alarm system will be installed to meet the requirements of the Massachusetts Building Code and the 1973 Life Safety Code. Manual pull stations will be located at all points of egress and in the projection booth. Automatic heat detectors will be located in all unsprinklered storage rooms, electric rooms, mechanical spaces, preparation areas, duct shafts, tops of stairwells and elevator shafts.

Automatic smoke/heat detectors will be provided in all areas of high combustible storage and on the stage. Provisions will be made for the initiation of the fire alarm system by smoke and heat detector systems to be added to the existing air handling systems. Interlocks will be provided to cause appropriate code-required action of the air handling systems. Activation of the fire alarm system will automatically summon the Boston Fire Department, energize audible and visual alarm signals and cause lighting necessary for egress to be energized at full brightness. Fire Alarm System shall have integral stand-by battery power source or shall be connected to the building emergency power supply.

5. Emergency lighting for egress including new exit lights will be provided as required by the Massachusetts Building Code. Emergency and exit light wiring shall be kept separate from normal lighting circuits. Automatic power for emergency lighting will be provided from stand-by inverter system with batteries or stand-by emergency generator.

6. Telephone service for public and private telephones will be provided via underground duct bank from a New England Telephone manhole in the street to a centrally located terminal board in the basement. Empty conduit will be provided from this central point to each telephone location. A pull-wire will be provided in each conduit. All wiring, terminal blocks and telephone instruments will be furnished and installed by the New England Telephone Company. Any general intercom system required in the building will be part of the New England Telephone system.

7. Existing cove lighting in the seating areas will be cleaned, reconditioned or replaced with similar type fixtures. The overall character of the lighting will be unchanged, i.e. the lighting will remain indirect, subdued, making use of architectural features and use incandescent lamps as the source. Power for the lighting will come from new branch circuit panels. All branch wiring for the lighting circuits will be new. Existing raceways will be provided as part of the new seating.

8. New lighting will be provided in all basement areas, in the new stage house, in the lobbies, and in other public spaces. Incandescent lighting will be provided in dressing rooms, small storage areas, lobbies and function room. Fluorescent

lighting will be provided in service areas, large storage rooms, mechanical rooms and work areas of the new stagehouse. All new wiring will be provided for new lighting reusing existing raceways whenever possible. New raceways will be provided as needed. Existing raceways which are unused will be removed or cut back to concealed spaces and sealed. Power for the lighting will come from new branch circuit panels. All new branch circuit wiring will be copper conductors with THW, THHN or XHHW insulation as required by circuit loads and the limitations of the existing raceway system.

9. Empty conduit system and power supply for use of external mobile TV equipment will be provided as needed.

Part D
Estimates of Construction Cost and Time

GENERAL

Estimates of construction cost and of construction time have been prepared by the Boston office of Turner Construction Company, who have secured the advice of mechanical and electrical subcontractors in estimating the work required in those critical areas. Allowance amounts for the performance systems and equipment have been furnished by the theatre design consultant, Bolt Beranek and Newman Inc., and are largely based on recently bid work. Allowance amounts for graphics and signing have been furnished to Turner by Cambridge Seven Associates.

The estimates cover construction cost only, and do not include costs such as financing, real estate taxes or rent during construction, design fees, testing and sub-surface exploration, owner's insurance, and movable furnishings or equipment. The contingency factor allows for normal development in the scope of work, for the lack of fully definitive data which is usual at this state of project development, and for the unknowns and risks inherent in renovation work.

Estimates of cost assume that the work will be built as a single general contract, with commencement of Area 1 work occuring in December 1975. Estimates of cost and time assume that the entire site will be turned over to the contractor for the duration of construction. If the Music Hall must remain in use during the 1975-76 and 1976-77 seasons, additional costs will be incurred and additional time will be required. Two plans have been analyzed:

A. Retain the full season, 1 November through 15 April

Construction would proceed during the available gaps between runs of performances and continue during the summer of 1976, with as much as possible of the new stagehouse being built around the existing stagehouse. Renovation of the existing Music Hall would proceed in phases, planned to leave in operation those areas and mechanical systems necessary for operation of the house. In the summer of 1977 the old stagehouse would be demolished within the enclosure of the new stagehouse, and the work completed in time for the 1977-78 season.

Cost premium: $300,000 to $400,000.
Construction time: 23 months.

B. Shorten the theatre season, 1 November through 5 January

The early work of demolition, utility relocation, and foundations would be expedited by a combination of early-let contracts and overtime work. With superior management, and no delays caused by strikes and shortages, the stagehouse additions and the renovation work could be substantially finished by opening of the 1976-77 season, with final finishing and systems tune-up to be performed during the season.

Cost premium: $50,000 to $100,000.
Construction time: 11 months (plus).

CONSTRUCTION COST SUMMARY

Area 1

Basic Work

1.	Stagehouse Expansion (41,500 SF @ $71.76/SF)	$2,978,000	
	Retail Shell Space (2000 SF @ $40/SF)	80,000	
	Performance Systems		
	Stage Rigging	330,000	
	Stage Lighting Control	240,000	
	Portable Fixtures	45,000	
	Sound Systems	60,000	
	Production Commun. Systems	15,000	$3,748,000
2.	Renovation Work (88,000 SF @ $21.66/SF)	1,906,000	
	Lighting Bridge	15,000	
	Proscenium Lighting Bridge	70,000	
	Followspot Positions	21,000	
	Control Booth	3,000	
	Marquee	50,000	2,065,000
	Contingency - 10%		582,000
	Utility Relocation Allowance		75,000
	TOTAL		$6,470,000

Assumed start of construction: 1 December 1975

Estimated construction time: 14 months

CONSTRUCTION COST SUMMARY

Area 1

Alternative Work

1.	Install 4039 new seats instead of 4039 reupholstered seats.	Add	$178,000
2.	Provide third balcony optional closure curtain.	Add	11,000
3.	Raise orchestra level floor, with re-spaced conventional seating.	Add	174,000
4.	Raise orchestra level floor, with continental seating.	Add	170,000
5.	Remodel smoking room into function room.	Add	136,000
6.	Substitute orchestra pit lift for fixed pit floor.	Add	187,000
7.	Provide a subbasement area for dressing and rehearsal rooms.	Add	591,000

Assumed start of construction: 1 December 1975

Estimated construction time increase over Basic Work:
Alternative 7: 3 months
Other alternatives: none

CONSTRUCTION COST SUMMARY

Area 1

Theatre Park

1.	Retail Shell Space (7300 SF @ $50/SF)	$365,000	
2.	Paving, Street Furniture	75,000	
3.	Theatre Bulletin Tower	350,000	$790,000
	Contingency - 10%		79,000
	TOTAL		$869,000

Theatre Bulletin Tower - Estimate of Operating Costs

Connected Lighting Load	128.8 kw.	
Operating hours per year	2,920 hours	
Yearly power consumption @ .035/kwh		$ 13,160
Ripple lamp burnout per year	1,400 lamps	
Yearly lamp replacement @ .35 each		490
Maintenance/relamping labor, allow		10,000
TOTAL		$ 23,650

Assumed start of construction: 1 December 1975

Estimated Construction Time increase over Basic Work: none

COST COMPARISONS

Area 1

An effort has been made to obtain cost data for recently renovated and new theatres, in order to secure a second check on the estimates prepared for the renovated Music Hall and its additions.

A. Theatre Renovations

Invariably there are special physical problems, important differences in program, or omissions from the available cost figures which make comparisons among projects difficult and susceptible of misinterpretation. With that condition in mind data has been collected on two recently renovated theatres.

1. Heinz Hall, Pittsburgh

Heinz Hall, the home of the Pittsburgh Symphony, Pittsburgh Ballet, Pittsburgh Opera, and Civic Light Opera, is a remodeled 1927 movie house, reopened for its present use in 1971. With 2730 seats (reduced from 3400) on orchestra and loge levels and in a single large balcony, it is strikingly similar in section to the Music Hall.

The work consisted of new seats and new sound reflectors and lighting in the auditorium, new finishes throughout the building, and addition of a six level building behind the existing stage house, accommodating dressing rooms and rehearsal space and expanding the stage depth to about 50 ft. The stage house was retained so that full stage rigging capability exists for only about half that depth.

Full comparative costs and area figures are not available. The published construction cost of $8,000,000 would be about $12,500,000 extrapolated to Boston, in 1975. This works out to $4579 per seat. However, without knowledge of the extent of ancillary facilities or of special costs not related to theatre construction, one should not directly compare that figure to the Music Hall estimates.

2. Fair Park Music Hall, Dallas

Fair Park was built in 1925 at the Dallas State Fair Grounds. Since that time it has presented a great number of musicals and operettas and today serves the Metropolitan Opera on its visits to Dallas. The remodeled house seats 3500 (a reduction from 4100) on an orchestra and single balcony level.

The building was renovated in 1973, with a new roof structure, new surfaces throughout and completely new mechanical systems. The stagehouse, about 40 ft. deep, was opened at the rear and a receiving/shop addition with

two levels of rehearsal rooms was added. Dressing rooms were totally rebuilt, and two lobby additions were made. Rigging, grid, lighting and sound systems were all new. The site, surrounded by parking lots, afforded the contractor easy access and staging.

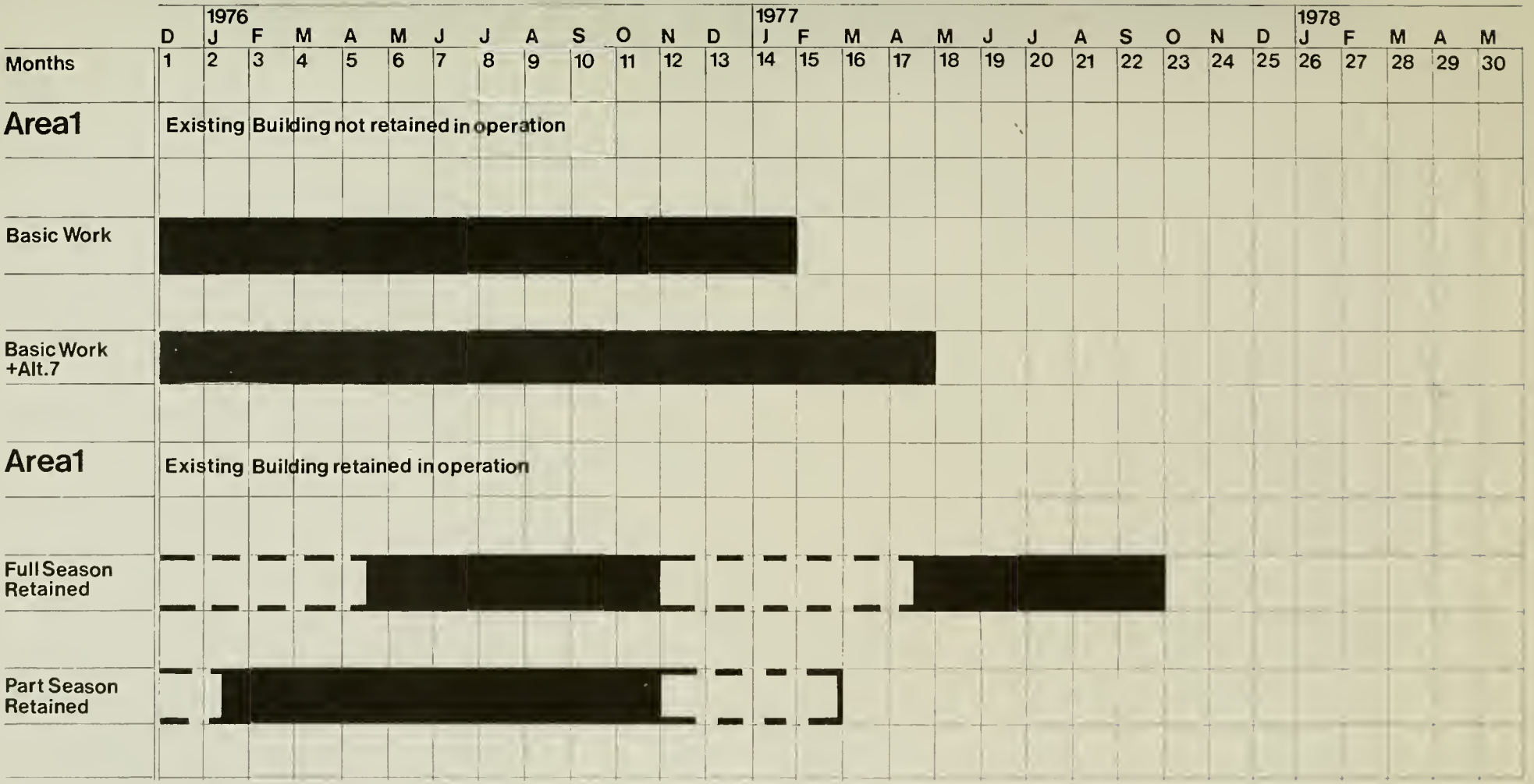
	Fair Park	Boston Music Hall
Area		
Renovated	105,200	88,000
New	34,500	41,500
TOTAL	139,700 SF	129,500 SF
Seating	3500	4039
SF per seat	39.9	32.1
Construction Cost (escalated to Boston, 1975)	$7,900,000	$6,470,000
Cost per SF	$56.55	$49.96
Cost per seat	$2257	$1600

B. New Theatres

Similar theatre projects in Turner Construction Company's records range in cost from $1900 per seat for a minimally equipped "Theatre in the Park" building to a mean of about $5000 per seat and an extreme of $9400 per seat. In each the costs have been escalated to Boston conditions in 1975, and, again, a portion of the variation is attributable to differences in the ancillary facilities provided. The theatres investigated range from 21 SF/seat to over 100 SF/seat.

In Turner's judgement an economically designed new theatre, comparable in facilities to the renovated Music Hall but with seating re-spaced to modern standards, could be built in Boston today for $4000 to $5000 per seat. This is construction cost, not project cost, and it does not include land acquisition.

Music Hall Renovation Study Construction Schedule


1976
D J F M A M J J A S O N D
1977
J F M A M J J A S O N D
1978
J F M A M
Months
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Area1
Existing Building not retained in operation
Basic Work
Basic Work +Alt.7
Area1
Existing Building retained in operation
Full Season Retained
Part Season Retained

Dashes denote limited construction work underway while building is in use

CHAPTER 3/AREA 2

POSSIBLE OPERA CENTER

CHAPTER 3/AREA 2 - POSSIBLE OPERA CENTER

Part A	Introduction and Summary	page 84-85
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AREA 2
POSSIBLE OPERA CENTER

Undeveloped Property

The currently undeveloped property east of the Music Hall and south of Parcel 7, owned by Tufts New England Medical Center, suggests a possibility for the creation of an Opera Center for the Opera Company of Boston, in conjunction with the Music Hall's renovation and expansion.

Opera Company Concept

The Opera Company of Boston has outlined a concept for long-range development, including a 2,000 seat main theatre, an outdoor performing area, two additional theatres of 800 and 400 capacity, substantial connecting back stage areas with extensive requirements for rehearsals, production shops and administrative space, and including a National Operatic Resource Library and a professional School of Opera.

Illustrative Program and Design

In order to define the scope of this concept, and to test the feasibility of achieving it on the land adjacent to the Music Hall, we have developed, as a part of this study, a set of program assumptions and an illustrative design.

Shared Public Space

As indicated on the drawings, important design concepts include shared lobby spaces with the existing Music Hall, internal connection from Washington Street to Tremont Street and public access to the parking garage.

Separate Opera Company Identity

The illustrative design shows how a Stuart Street entrance to the Opera Center would provide clear and separate identity for the Opera Company at Stuart Street, and direct access to the Library, School of Opera, offices and shops.

Backstage Connection to Music Hall

By connecting the backstage area of the Music Hall to the workshops and to the backstage area of the 800 seat theatre,

the complex can operate as one entity when the Music Hall is in use by the Opera Company. At other times, when the Music Hall is being used by others, there would be complete physical and acoustic separation.

Rehearsal Core

Throughout the center of the illustrative design, large rehearsal spaces are vertically stacked for structural efficiency and effective use of the non-daylit core areas.

Perimeter Activity

Spaces requiring perimeter daylight, such as offices, are organized at the edges of the property, with elevators and stairs providing floor to floor access as centrally and conveniently as possible.

Stacked Theatres

Due to dimensional limitations on this downtown site, the third theatre is located directly underneath the second theatre, with vertical connections for the public in a shared lobby and service connection by backstage elevator.

Summary

This illustrative design by definition includes numerous compromises in its organization, some of which might be cured through further refinement, others of which would remain, an unavoidable result of the assumed site condition.

The Music Hall itself, even with the inclusion of alternatives identified to date, such as continental seating and a reduced house size, also inherently compromises, quite severely, the stated desires of the Opera Company.

The remodeled and expanded Music Hall innevitably cannot have the same intimacy, acoustics, and special character as a 2000 seat house, tailored specifically for opera as presented by Sarah Caldwell.

This study presents a possibility of total development, and a possibility of economy through the sharing of facilities and financing.

Whether or not these possibilities justify further exploration in view of their inherent compromises in programmatic goals, only the Opera Company of Boston can judge.

Part B
Program - Area 2

Area 2 is the area immediately east and north of the existing Music Hall, bounded by Stuart Street on the north, Washington Street on the east, Area 1 on the west, and a line parallel to the new Tufts - NE Medical Center garage on the south. It is presently occupied by parking lots and by Dore and Dillaway Streets, which will be closed. The area includes about 46,000 sq.ft. and pitches 14 ft. along its diagonal, towards the northeast.

The facilities proposed within Area 2 are based on the stated general desires of the Opera Company of Boston and include two additional theatres with their lobbies and backstage facilities, shop and rehearsal spaces located to serve the complex of three theatres, offices for the Opera Company, and facilities for a professional School of Opera and for a National Operatic Resource Library. A number of quantitative assumptions have been made here for the purposes of testing the site with an illustrative conceptual design. These program quantities and descriptions are not necessarily an accurate statement of Opera Company requirements.

Program - General Requirements

A. Two theatres are required.

   Theatre 2, accommodating 800 in continental seating, is to be a simple rectangular space, with stepped floor and relatively little distinction between house and stage. Intended for performances of early theatre and music, it is modeled in part upon the Baroque theatres of Europe.

   Theatre 3 is to be a large room, flexibly equipped. Called a 'black box', or 'experimental theatre', or 'great unfinished room', it should permit a variety of theatrical activity including use of new and experimental audio and visual media, and it should seat up to 400 persons in variable arrangements.

B. Entrance to Opera Company offices, school, and library should be separate and easily identified from those of the theatres. Entrances and lobby areas of the two theatres should lead into the present Music Hall lobby system for economy of services and ease of public access and circulation, and in order to capitalize on the mutual reinforcement which the activitiy in each theatre can lend to the others.

C. Each of the three theatres must be capable of independent use, with public and service access which will not interfere with use of the other theatres. Each must be acoustically separate.

D. Stage level for theatre 2 should be the same as that of the Music Hall. With major shops or rehearsal areas also located on this level, maximum flexibility in use and ease of materials handling will be achieved. The receiving areas built in Area 2 should complement those of Area 1, permitting either joint or separate use.

E. As much street frontage is to be devoted to retail purposes as theatre requirements will permit. To retain visual continuity of the street, the new building edge should come to the property line and the building height should approximate the 4 to 6 story height now prevalent in the area.

Part B
Program - Area 2
Specific Requirements

The following specific program requirements are not based on detailed analysis of the needs of the Opera Company of Boston but are modeled on recent projects considered similar to Opera Company requirements.

A. Production Facilities
(Serving all three theatres, and the School of Opera)

1. Rehearsal Space		
Stage size room	3,600	
Orchestra rehearsal	1,800	
Ballet rehearsal	1,800	
Small rooms (4)	1,600	8,800 SF
2. Shop Space		
Carpentry shop	4,250	
Metal shop	1,750	
Paint shop	7,000	
Costume shop	2,600	
Sewing area	3,200	18,800 SF
3. Receiving Space		600 SF
4. Green Room		2,000 SF
5. Storage		
Scenery, props	4,400	
Costumes	3,000	7,400 SF
6. Administration		
Private offices (6)	900	
Directors room	400	
General office	1,200	
Music Library	500	
Office storage	100	3,100 SF
TOTAL: Production Facilities		40,700 SF

B. Theatre 2

1.	House (800 seats)		6,000 SF
2.	Lobby		
	Circulation space	2,400	
	Toilets, coats	1,700	4,100 SF
3.	Orchestra Pit (40 musicians)		600 SF
4.	Stage House		
	Proscenium: 50ft. w. x 30ft. h.		
	Stage depth 50ft.		
	Side stages each 35ft. deep		
	Gridiron height 75ft. above stage		
	Trap room 25 x 40		7,000 SF
5.	Rehearsal Space		1,500 SF
6.	Dressing Rooms		
	Star rooms (4)	800	
	Principal/Chorus	1,600	
	Orchestra	800	
	Toilets, showers	400	
	Greenroom	500	4,100 SF
7.	Storage		1,000 SF
8.	Administration		400 SF
TOTAL: Theatre 2			24,700 SF

C. Theatre 3

1. House (400 seats)		5,000 SF
2. Lobby		
Circulation space	1,600	
Toilets, coats	1,000	2,600 SF
3. Dressing Rooms		
Star rooms (2)	400	
Chorus rooms (2)	1,000	
Toilets, showers	400	1,800 SF
4. Storage		1,000 SF
5. Administration		400 SF
TOTAL: Theatre 3		10,800 SF

D. School of Opera

1. Rehearsal Space		
Large room	3,600	
Small rooms (6)	2,400	6,000 SF
2. Dressing Rooms		
Rooms (2)	800	
Toilets	200	
Student Lounge	500	1,500 SF
3. Storage		1,000 SF
4. Administrative/Teaching		
Private offices (4)	600	
General office	1,000	
Office storage	200	
Classrooms (3)	1,500	
Film viewing	500	3,800 SF
TOTAL: School of Opera		12,300 SF

E. National Operatic Resource Library

1. Administration		
Reception/exhibits	1,000	
Private offices (2)	200	
General office	500	1,700 SF
2. Library		
Workroom	500	
Reading area - 50 seats	2,000	
Book stacks - 15,000 vols	2,000	
Rare book area	500	
Music storage	2,000	
Records, tapes storage	2,000	
Photo storage	1,000	
Listening rooms	800	10,800 SF
TOTAL: Opera Library		12,500 SF
GRAND TOTAL (Area 2, net area requirements)		101,000 SF

Part C
Proposed Construction

AREA 2

Area 2 construction consists of two theatres, Theatre 2 and Theatre 3, built one over the other, and served from a common entrance and lobby connecting to the present Music Hall lobby system. They are serviced from a receiving dock on Stuart Street which also serves the shop and rehearsal areas of the Opera Company. These latter areas form the lower four levels of a new seven-level building at the corner of Stuart and Washington Streets, with the upper three levels occupied by Opera Company offices, the School of Opera and the National Operatic Resource Library. The levels are termed Basement 2, Basement 1, Ground Floor and Levels 2, 3, 4 and 5.

An important feature of Area 2 construction is the multi-level egress stair structure built along the Music Hall east wall. This stair system replaces the two fire escapes retained under the Area 1 work. It connects the existing Music Hall exits and new Theatre 2 and 3 exits to a protected egress-way and exterior vomitory similar to that on the west wall of the Music Hall. It has further value as an acoustic break and as a separation minimizing the need to underpin the Music Hall foundations.

Construction of the Area 2 work requires breaking through into the existing Music Hall at two points and connecting to prepared openings in the Music Hall stage addition at two other points. Area 2 work will overlap Area 1 at one place: a portion of the backstage Music Hall dressing area which will receive two additional stories (Level 3 and 4 Opera School space).

The work of Area 2 is estimated as if it will be carried out in step with the work of Area 1, thereby minimizing extra costs and difficulties such as noise interference, access problems, and unusual underpinning risks. If it cannot be built at the same time, extra costs, as well as cost escalation due to the delay, will be incurred and are described in Part E.

A. Production Facilities

Major rehearsal spaces occur at Basement 2 level, served by passenger and freight elevators. At these levels direct connection is made to the dressing room level(s) and the elevator system of the Music Hall. Smaller rehearsal spaces occur on Level 3, near the Opera Company offices and the School of Opera main rehearsal space.

Shops occur on three levels. The carpentry shop opens directly onto the Music Hall and Theatre 2 stages, and can serve Theatre 3 via the freight elevator and Basement 2 corridor system. The receiving dock opens directly into the carpentry shop. The paint shop is split; part is adjacent to the carpentry shop and part is on the floor above, with a large floor opening to permit handling of large pieces. A metal shop is on Basement 2 level, and a costume shop on Basement 1. Like the rehearsal area, the shops are well located to serve the Music Hall itself as well as the Area 2 theatres.

Storage of properties, scenery and costumes occurs at Basement 2, where it is served by the freight elevator.

A greenroom is located on Level 2, overlooking Washington Street. Public access is provided by stair from the Washington Street theatre entrance and private access from Theatres 2 and 3 and from the Level 2 Opera Company areas.

Opera Company offices appear at Level 3, reached by elevator from the Stuart Street entrance.

B. Theatre 2

Entrance from Washington Street leads to a new theatre lobby connecting to the Music Hall main lobby. From the new lobby two elevators and generous public stairs lead down to Theatre 3 and up to Theatre 2.

Theatre 2 seats about 800 people, at continental spacing, with access to seating provided by two stepped corridors connected through a series of doors to each side of the house. The house is relatively long and narrow for its capacity, and is steeply stepped for excellent viewing and hearing conditions. It will be finished very simply, with little emphasis on the proscenium line, so that scenery can extend beyond the stage to envelope the audience. The ceiling will be coffered or faceted in plaster, with openings made for lighting and stage control, and side lighting positions, each side of the house, will be provided.

The proposed pit accommodates 40 musicians, with access from a locker room below. The stage house is 50 ft. deep by 120 ft. wide, with a grid at 65 ft. A 25 ft. x 40 ft. traproom is provided. A large sound-insulated roll-up door at the rear of the stage connects directly to the carpentry shop and across it to the Area 2 receiving dock.

Theatre 2 dressing rooms are directly below the stage, with access by stair at stage right and left. Access is

also provided to the Opera Company shop and rehearsal levels. Administration space for both Theatre 2 and Theatre 3 is provided at an intermediate level near the public lobby.

C. Theatre 3

Theatre 3, at Basement 2 level, is reached by stair and elevator from the new ground floor lobby. It has its own lobby, with coat room, refreshment area and toilets. The theatre itself is a 64ft. x 84ft. rectangular space, simply finished, with a high flat ceiling grid and lighting catwalks.

Seating is on modular grandstand units, capable of a variety of arrangements. A sound-insulated roll-up door at one side of the house leads to the Area 2 freight elevator, and thereby to receiving and shops. Dressing rooms are located adjacent to the Theatre.

D. School of Opera

School offices, classrooms and smaller rehearsal rooms occur at Level 4, where they can overlook, through soundproof glazing, the School's large stage-size rehearsal room. The School reception area is reached via the same passenger elevators from the Stuart Street entrance which serve the Opera Company and Library.

A student lounge, storage rooms and the School's dressing area occur at Level 3 alongside the large rehearsal room. Like the rehearsal rooms listed under Production Facilities, this room is of two storey height and has room finishes and acoustical treatment appropriate to its use.

E. National Operatic Resource Library

Library facilities are entirely housed on Level 5, reached by elevator from the Stuart Street entrance. An exhibit area, with large north-looking windows, occurs at the library entrance. Stack areas, interspersed with reading alcoves, extend around the naturally lit perimeter, with storage and work spaces located at the interior.

Proposed Construction

Program Conformance

AREA 2

	Net Areas Programmed	Proposed
A. Production Facilities		
1. Rehearsal space	8,800	9,100
2. Shop space	18,800	16,500
3. Receiving	600	600
4. Green Room	2,000	1,650
5. Storage	7,400	6,560
6. Administration	3,100	3,050
Total	40,700 s.f.	37,530 s.f.
B. Theatre 2		
1. House	6,000	6,000
2. Lobby	4,100	5,040
3. Orchestra Pit	600	600
4. Stagehouse	7,000	7,000
5. Rehearsal space	1,500	--
6. Dressing rooms	4,100	3,520
7. Storage	1,000	--
8. Administration	400	820
Total	24,700 s.f.	22,980 s.f.
C. Theatre 3		
1. House	5,000	5,200
2. Lobby	2,600	3,920
3. Dressing rooms	1,800	2,160
4. Storage	1,000	1,480
5. Administration	400	820
Total	10,800 s.f.	13,580 s.f.
D. School of Opera		
1. Rehearsal space	6,000	7,140
2. Dressing rooms	1,500	1,560
3. Storage	1,000	800
4. Administration/Teaching	3,800	4,050
Total	12,300 s.f.	13,550 s.f.
E. National Operatic Resource Library		
1. Administration	1,700	1,800
2. Library	10,800	9,200
Total	12,500 s.f.	11,000 s.f.
GRAND TOTAL: Net Areas	101,000 s.f.	98,640 s.f.

PROPOSED CONSTRUCTION
Gross Area Summary

Area 2

Ground Area 46,111 SF

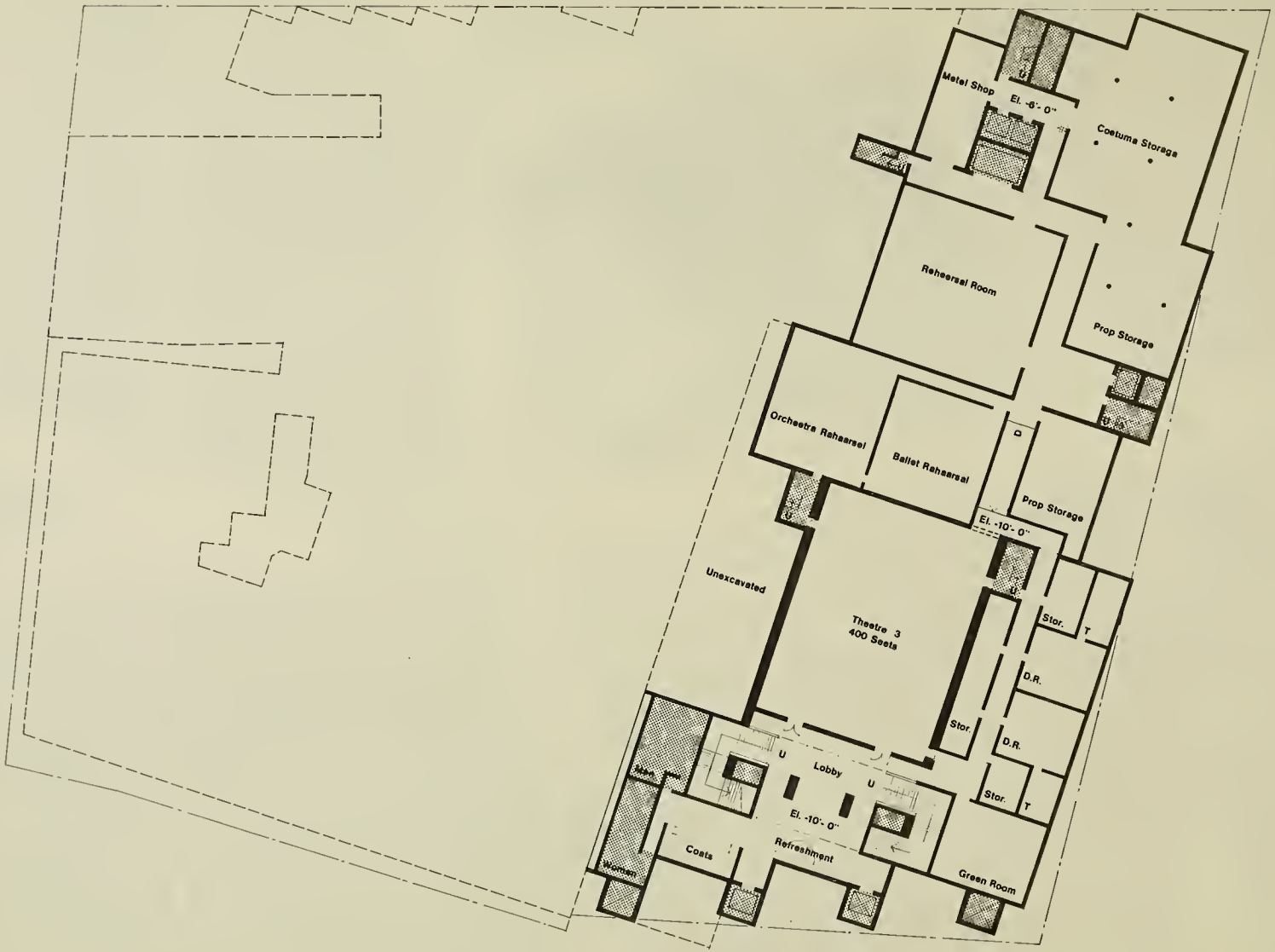
Floor Areas

	net	gross
Level B-1	27,260	37,500
B-2	9,620	27,000
Ground Floor	13,000	28,900
Level 2	19,180	24,600
3	11,490	27,200
4	6,990	14,600
5	11,000	14,200
	98,640	174,000

Retail space 4,000

TOTAL: Gross Floor Area 178,000 SF

Boylston Street
Colonial Theatre
Tremont Street
Publix Theatre
Essex Street
Pilgrim Theatre
Gary Theatre
Saxon Theatre
Washington Street
Beach Street
Stuart Street
Center Theatre
Stuart Theatre
Kneeland Street
Wilbur Theatre
Area2
Shubert Theatre
Charles Street Extension
Tremont Street
Charles Playhouse
Parking Garage
Washington Street
Tufts New England Medical Center
Harrison Avenue
97



Cambridge Seven Associates, Inc.
1050 Mass. Avenue, Cambridge, Mass. 02138

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DATE OF ORIGINAL
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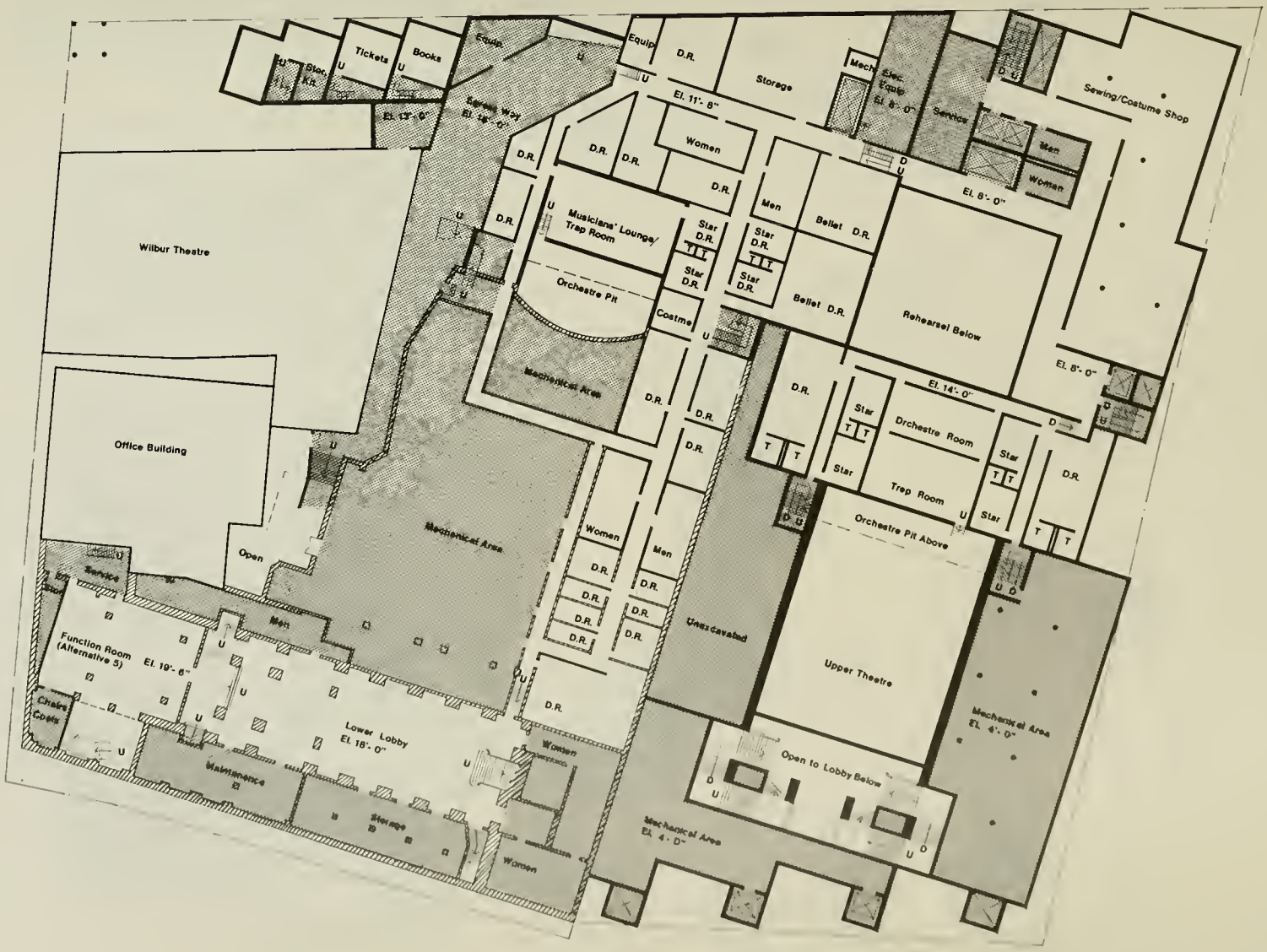
SCALE

MUSIC HALL RENOVATION STUDY

Areas 1 & 2
Level B-2

10



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MUSIC HALL
RENOVATION STUDY

Areas 1 & 2
Level B-1

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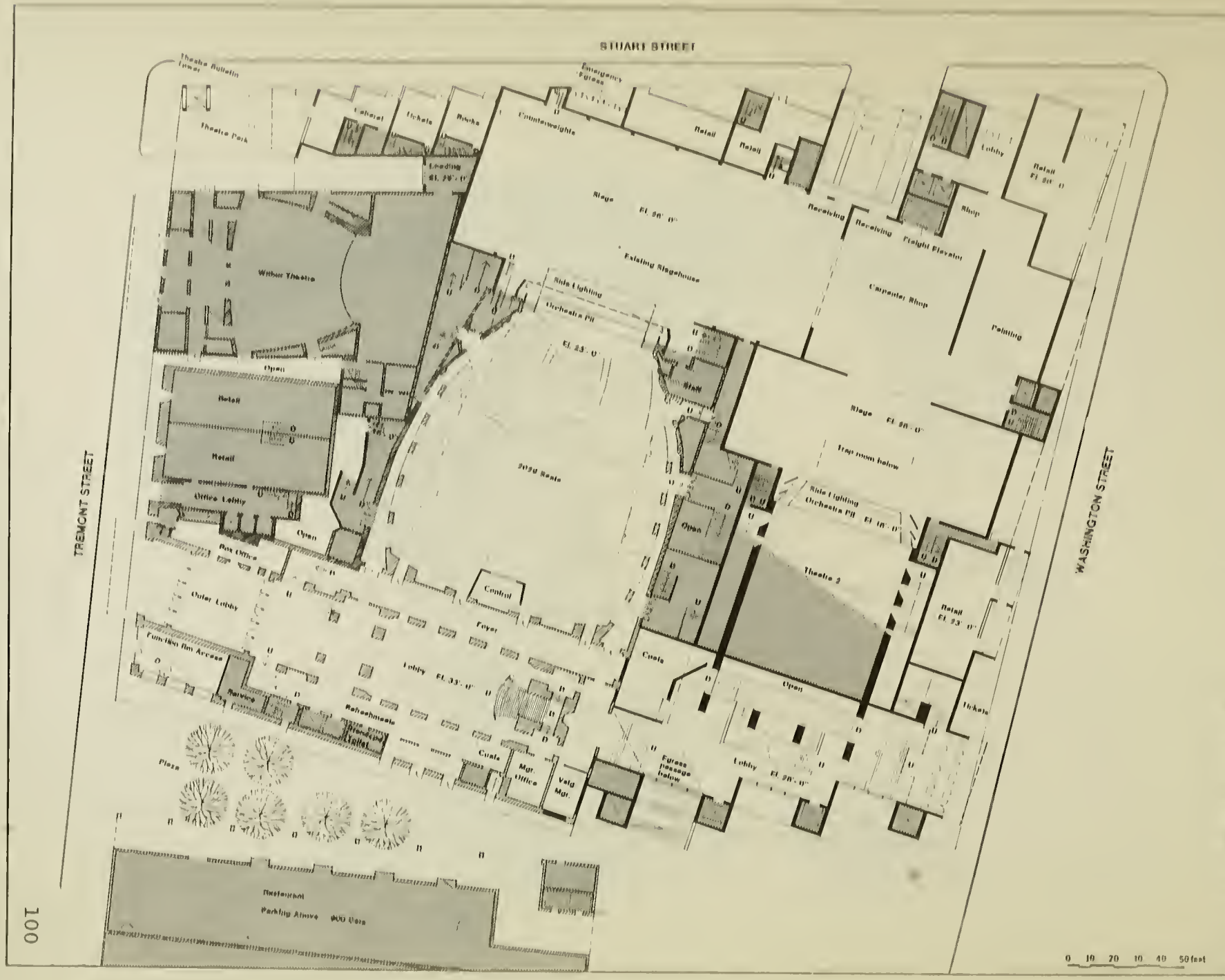

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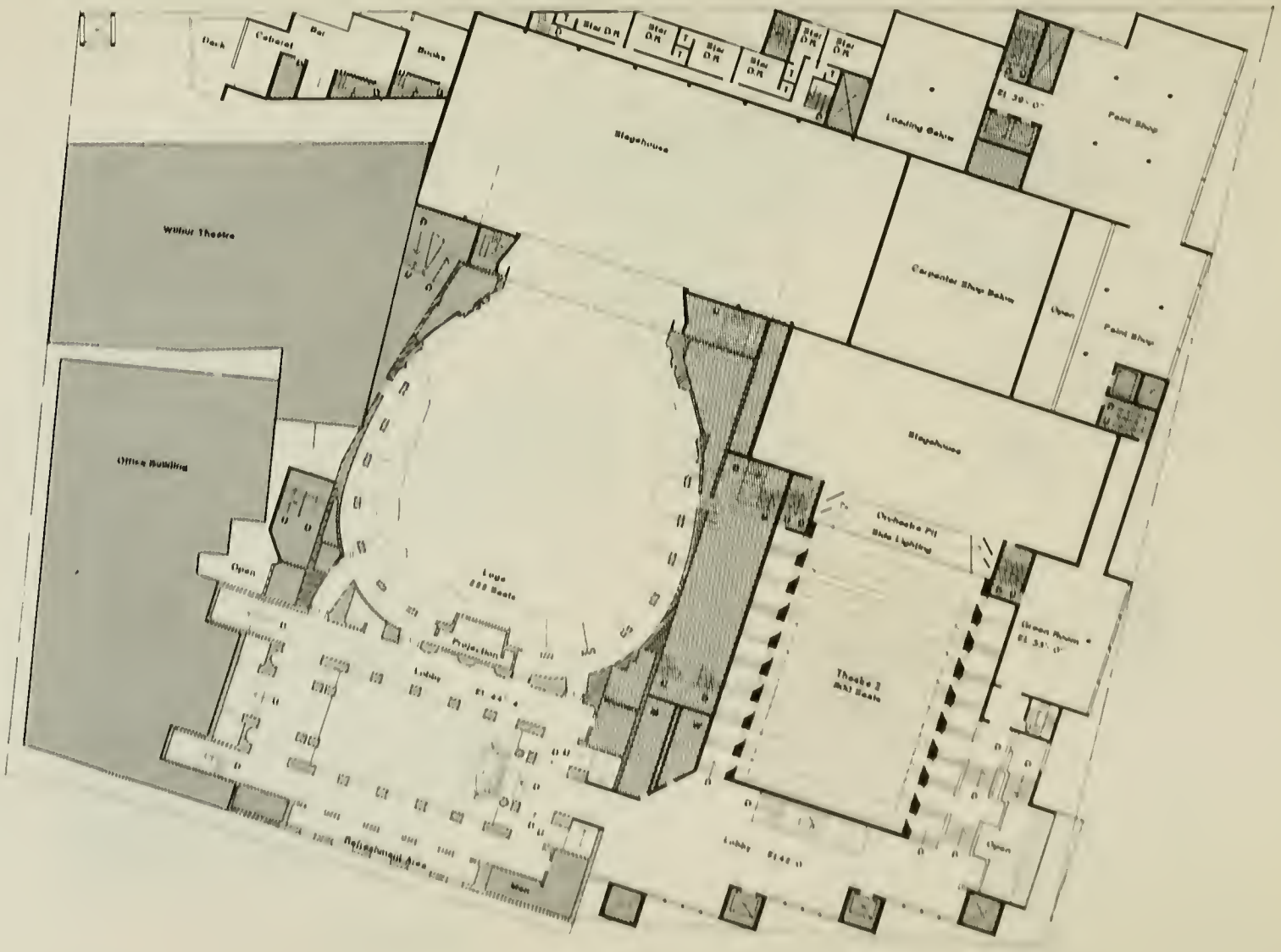
MUSIC HALL
RENOVATION STUDY

Areas 1&2
Ground Level

12



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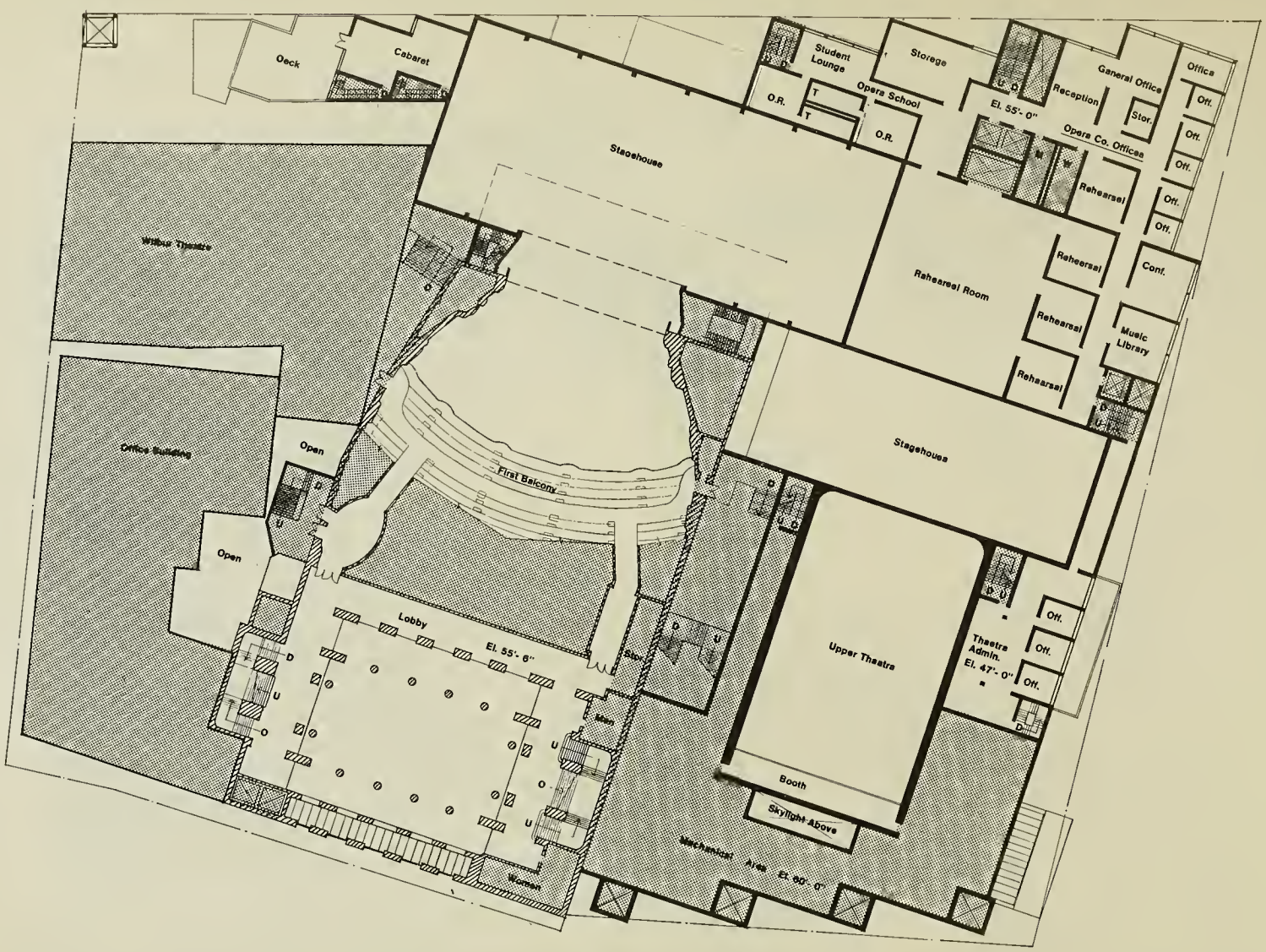
Cambridge Seven Associates, Inc

MUSIC HALL
RENOVATION STUDY

Areas 1 & 2
Level 2

13



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MUSIC HALL RENOVATION STUDY

Areas 1 & 2
Level 3

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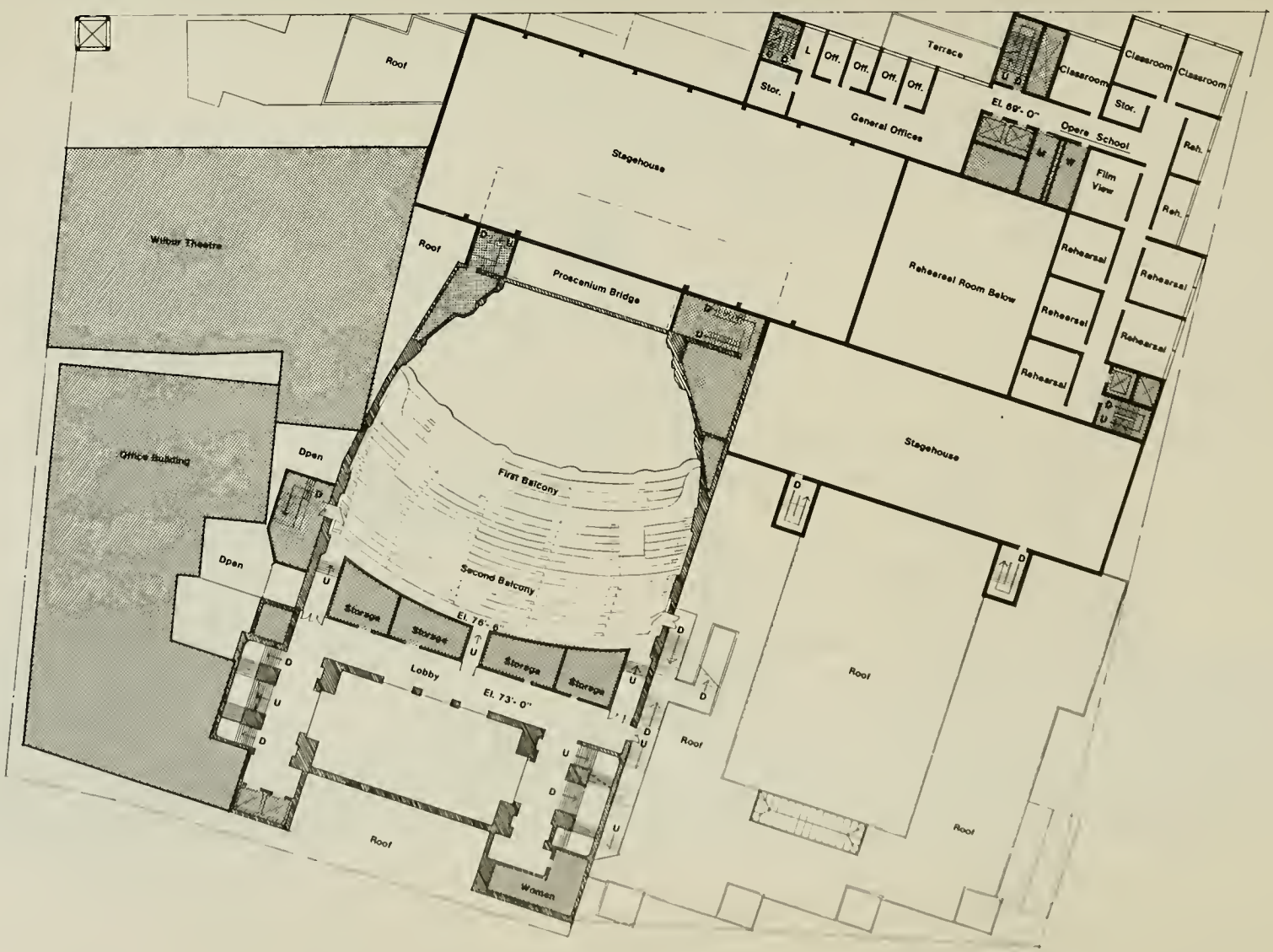

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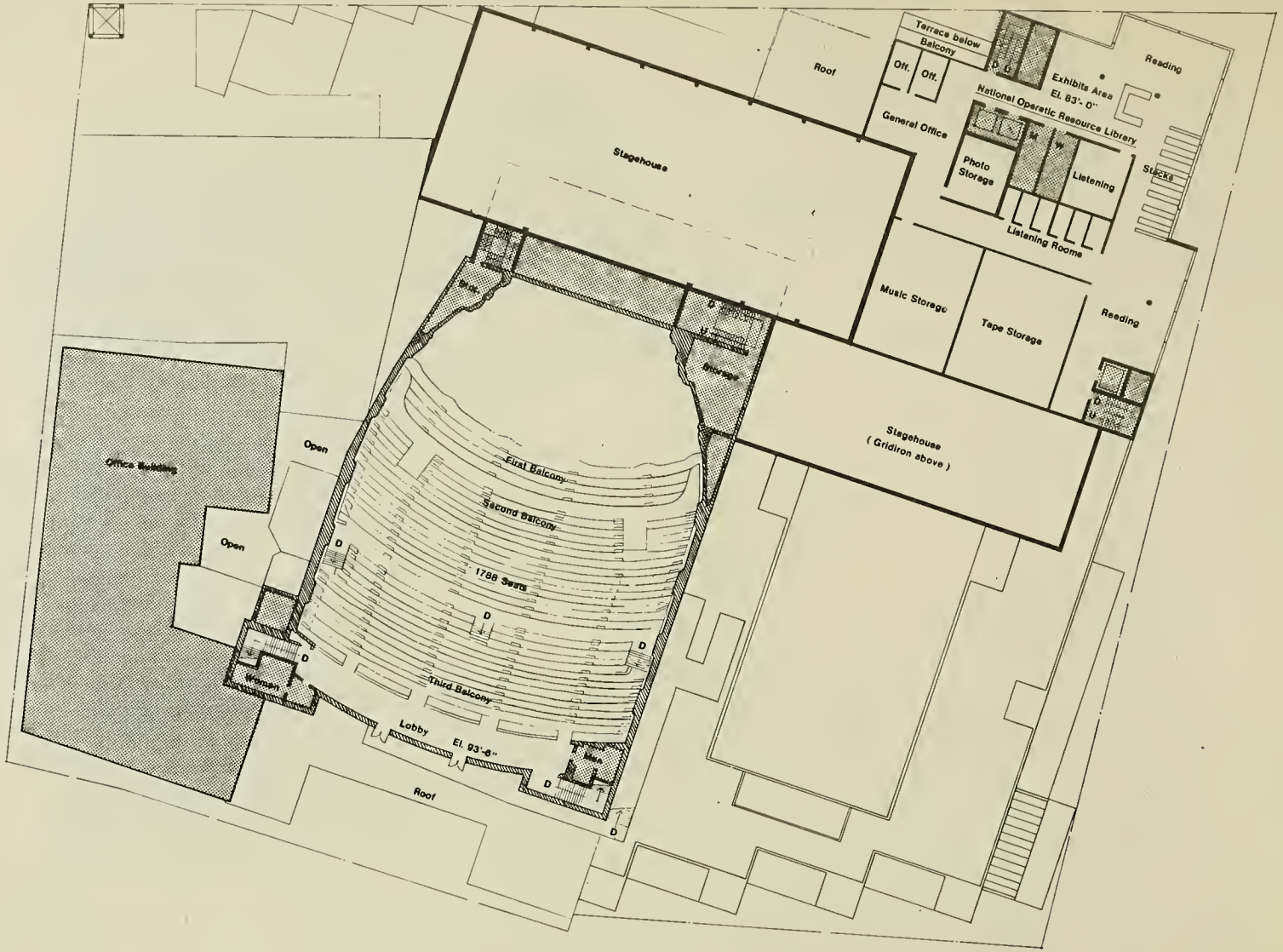
RENOVATION STUDY

Areas 1 & 2
Level 4

15



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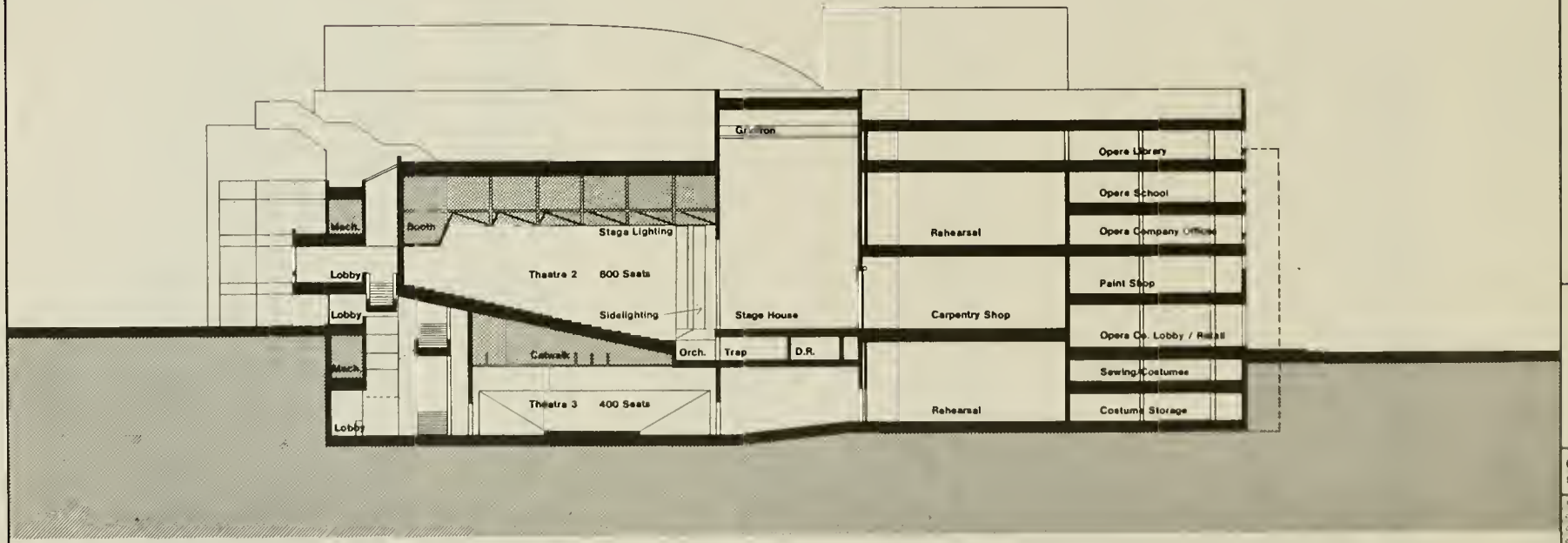
MUSIC HALL RENOVATION STUDY

Areas 1 & 2
Level 5

16



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MUSIC HALL
RENOVATION STUDY

Area 2
Section

17

Part D
Outline Specification
Scope of Work

AREA 2

1. Architectural and Structural Systems

A. Demolition

Remove existing fire escape construction on the Music Hall east wall.

B. Sitework

Paving at building setbacks: unit pavers in mortar.
Planters: concrete matching the building.
Landscaping: tree and plant species selected for low maintenance and urban hardiness.

C. Structure

Concrete foundation system at the new stagehouse: concrete spread footings, foundation walls and 5" slab on grade. Sheet and brace excavations, dewater, and underpin adjacent structures as required. Clay backfill and underdrainage system will eliminate need for most subgrade waterproofing.

Steel framing above grade: all Type A36. Two hour fire-proofing on beams and columns only. Floor slabs to be composite design, typically $6\frac{1}{4}$" thick 110 lb. concrete on metal deck.

Gridiron: heavy subway gratings 18lbs./SF.

Light Bridges: steel trusses, suspended from overhead framing.

D. Exterior Walls

Opaque areas: cast in place concrete, color controlled with rough form texture. Spandrels and similar elements to be matching precast concrete with concrete block backup.

Storefront construction: clear float glass in Duranodic aluminum frames, with matching narrowstile doors and heavy duty hardware.

Upper level windows: clear insulating glass in fixed Duranodic aluminum frames.

Louvers: painted steel.

Enclosure at above-roof egress stairway: panels on lightmetal framework.

E. Roof Finishes

Built-up asphalt and gravel roof, over 1½" insulation board. Metal counter flashing. Smoke vents as required by Code - those at the stagehouse to have sound attenuation provisions.

F. Interior Partitions

Around theatres, stagehouse, stairtowers and egress passages: 3 hour concrete block.
Lobby, shop, and other high use areas: concrete block, clad is some cases with precast concrete matching the exterior.
Office and dressing room areas: steel stud and gypsum board, with special sound insolation provisions where required.

G. Interior Finishes

Lobby Levels, Public Stairs

Ceilings: suspended gypsum board with concealed spline acoustical tile or snap-in metal slat systems where sound absorption is required.
Walls: plaster, with exposed cast-in place conceret or precast concrete panels used in selected areas.
Floor: Pirelli heavy rubber flooring in outer lobby, otherwise carpet.
Railings: polished brass, with tempered glass guard panels around openings.

Theatre 2

Ceiling: coffered suspended plaster system, with openings for stage lighting and control systems.
Walls: plaster, with applied wall covering.
Floor: carpet.

Theatre 2 Stagehouse

Ceiling and Walls: painted structure.
Floor: resilient wood flooring, with potential for future cutting of traps.

Theatre 3

Ceilings: black painted metal structure with catwalks.
Walls: plaster.
Floor: resilient wood flooring.

Public Toilets

Ceiling: painted gypsumboard.
Walls and floors: ceramic tile.

Dressing Area: Room and Corridors

Ceilings: suspended acoustical tile
Walls: painted gypsum board or concrete block.
Floor: vinyl asbestos tile.

Dressing Area: Toilet/Shower Rooms

Ceilings: painted gypsum board.
Walls: epoxy painted concrete block, or ceramic tile.
Floors: ceramic tile.

Offices, Library and School Areas

Ceiling: suspended acoustical tile, or gypsum board.
Walls: painted gypsumboard, with selected areas specially treated with vinyl covering or wood paneling.
Floors: generally carpet, with vinyl asbestos tile in areas unsuited for carpet.

Rehearsal Rooms

Ceiling: painted structure, with acoustical absorption as required.
Walls: painted concrete block or gypsumboard, with applied acoustical materials as required.
Floors: resilient wood (large rooms), carpet or vinyl asbestos tile (other rooms.)

Shop Areas

Ceilings; painted structure, with acoustical absorption as required.
Walls: painted concrete block.
Floors: hardened concrete.

Storage and Mechanical Rooms, Egressway

Ceilings: unpainted structure.
Walls: unpainted concrete or block.
Floors: hardened concrete.

Retail Space

Ceilings: unpainted structure.
Walls: unpainted concrete or block.
Floors: hardened concrete.

H. Vertical Transportation

Passenger elevators: 3,000 pound cabs, with brass and plastic laminate finishes.
Freight elevator: 10 x 20 cab, height as required.
Public stairs: carpet covered, steel pan with concrete fill. Rails in wood or brass to match other trim.
Egress stairs: steel pan with concrete fill, pipe rails, painted.

I. Specialties and Casework

Seating, Theatre 2:

Upholstered self-lifting seats, spaced 20" to 21" apart and 40" front to back (continental spacing)

Seating, Theatre 3:

Diemountable modular bleachers, possible to combine in a number of different arrangements.

Lobby Seating:

Fixed upholstered units integral with planters or other elements.

Counters: plastic laminated, hardwood trim.

Toilet Areas:

Metal partitions, baked enamel finish. Stainless steel accessories.

Building Graphics:

Directional, room identification and special purpose signing. Office entrance directory and exterior building identification. Posterboards and marquee at the Washington Street theatre entrance.

2. Performance Systems and Equipment

A-1 Stage Rigging - Theatre 2 only

1. Functions:

   a. Hanging, shifting, storing of scenery, curtains and masking, overstage lighting equipment.

   b. Vertical and horizontal operation of house curtain.

   c. Operation of elements to adjust size of proscenium openings.

   d. Operation of fire curtain, if practical and required (alternates possible; may be required by OSHA standards, industry conditions).

   e. Support and storage of projection screen.

2. Components:

   a. Single-purchase counterweight sets nominally 6" o.c. full depth of stage, each 1,200 - 1,500 pounds capacity.

b. Special, larger capacity sets for permanent heavy loads, house curtain, etc.

c. Spot lines and hand rigging equipment for individual show items, when required.

d. Tracks, swivel arms, etc., for stage masking curtains.

e. Special pickup rigging, etc., for overstage lighting.

A-2 Stage Rigging - Theatre 3 Only

1. Functions:

a. Hanging of visual elements, decor, etc.

b. Support, positioning of special lighting, sound equipment.

c. Movement of lights, etc. between floor and catwalks.

d. Occasional positioning of special curtains, maskings, etc.

2. Components:

a. Manual spot lines.

b. Single or multi-line movable winch units for heavy items.

c. Mountings, tie-offs, controls, as required.

B. Stage Curtains and Maskings - Theatre 2 Only

1. Functions:

a. Fire curtain: automatic fire separation between stagehouse and auditorium. Alternate (drencher pipe for water curtain) may be acceptable. May be required if typical asbestos fire curtain not available due to OSHA-asbestos industry controls.

b. House curtain: visual separation between performance and audience; intermissions, before and after shows.

c. Stage masking curtains: neutral, variable enclosure and background for performances, events, assemblies.

d. Sky drop (cyclorama): sky effects, scenic effects projections, etc.

e. Projection screen: motion picture and slide showing.

f. Proscenium maskings: change size of openings as required by individual performances, events.

2. Components:

a. As listed above.

b. Stage masking curtains include bi-part traveler curtains, top-masking borders, side-masking curtains and legs, semi-transparent scrims. Quantities, sizes to depend on project development.

C. Adjustable Sound Absorbing Curtains - Theatres 2 and 3

1. Functions:

a. Partial adjustable control of auditorium acoustical environment to meet specific performance needs.

b. In Theatre 3: also variable visual background and masking.

2. Components:

a. Curtains, per project acoustical design development.

b. Tracks: motor operators, winches, rigging, as required.

c. Motor controllers, limit switches, etc., as required.

d. Manual operators, Theatre 3.

D. Movable Light Bridges and Rigging - Theatre 2 Only

1. Functions:

a. Variable adjustment of proscenium height.

b. Conforming adjustment of lighting positions.

c. Conforming height adjustment of sound reflecting panels at tope of proscenium.

d. Possible conforming adjustment of sound reinforcement loudspeaker cluster. To be determined in project development.

e. Rapid, economical adjustment and service of major performance lighting equipment for individual productions, by lowering to stage level.

f. Safe, rapid access to performance lights for focusing and service when at performance height.

2. Components:

a. Bridge framing: walkway, safety and light-mounting rails, support framing for sound reflecting panels and facing on auditorium side.

b. Rigging, counterweights, guide tracks, motor-winches.

c. Control, limit and safety switches and indicators.

E. Auditorium Lighting Control - Theatres 2 and 3

1. Functions:

a. Fade-out and fade-in of auditorium lights for smooth transitions to and from performance.

b. Selective control and balance of auditorium lighting by area and level.

c. Similar control and balance of accent lighting in auditorium.

2. Components:

a. Remote-controlled electronic dimmers, switching and power control equipment.

b. Operating dimmer and switch controls, selector and indicating components.

F. Stage Lighting Control and Distribution System, Production Control, and Accessory Equipment.

1. Functions:

a. Visually, and artistically effective control of performer lighting.

b. Control of special lighting effects.

c. Control of scenic and background projection.

d. Similar lighting control for assemblies and events.

e. Recording, storage and recall of complex multi-dimmer cues (specific lighting combinations) required for individual productions.

f. Selective switch and/or dimmer control of "backstage" and service area worklights.

g. Provisions of power and lighting circuit access for visiting company control equipment ("road boards").

h. Coordinated control for interrelated performance systems and equipment.

2. Components:

a. Connector strips and plugging boxes over stage, at auditorium ceiling catwalks, lighting bridge and sidewall lighting locations.

b. Cross connect panel for variable connections of load circuits to dimmers.

c. Remote-control electronic dimmers, switching and protective control components.

d. Operating control console, multi-channel switch, dimmer and store-access controls for cueing and operation of stage lighting.

e. Memory components for storage and selective playback of multi-channel (multi-dimmer) lighting cues preset to performance requirements.

f. Visiting company panel with power section for "road boards" and plugging section for access to permanent stage lighting circuits.

g. Backstage production control panel for control of worklights. Typically provides space for auditorium light control station, lift and rigging controls,etc.

h. Stage manager's console (desk) for overall performance control.

i. Footlights and any other permanently installed performance stage lights.

G. Stage Lighting and Accessories (Movable Fixtures)

1. Functions:

a. Optically adjustable, portable light sources to provide variable range of source characteristics to meet specific performance lighting needs.

b. By location, and dimmer and switching control, performance variation of color, direction and visual character of stage lighting.

c. Strip lights, flood lights: broad area illumination.

d. Spotlights: specific hard or soft edged general or directional lighting of performance areas. Accent lighting of performers or visual elements.

e. Follow spotlights: individual operator-controlled movable accent lighting for individual performers or groups. Moving light effects.

f. Pattern and optical projectors: visual effects, including patterned illumination; visual backgrounds and effects.

2. Components:

a. Lighting instrument (fixture) types per above.

b. Auxiliary color media and frames.

c. Auxiliary beam control devices (hoods, barn doors, etc.)

d. Hanging clamps, mounting brackets, stands, etc.

e. Extension cables, portable power and plugging devices.

f. Initially installed lamps.

H. Sound Reinforcement and Sound Effects

1. Functions:

a. a. High quality reinforcement of speech and sound for performances, lectures, assemblies, and other events.

b. Enhancement of natural acoustics for seating areas where natural acoustics are unsatisfactory.

c. Playback of recorded material which is part of a performance or event.

d. Amplification and sound distribution for electronic music and electronic musical instruments.

e. Playback of performance sound to onstage and "backstage" performers.

f. Archival recording of assemblies and events.

2. Components:

a. Central loudspeaker cluster.

b. Additional fixed loudspeakers for enhancement, and performance effects.

c. Portable loudspeakers for variable sound-source location to suit performance needs.

d. Fixed and portable microphones for pickup of "live" sound.

e. Tape recorder-reproducers and disc reproducers.

f. Multi-channel amplification, cross-connection and control components.

I. Production Communication, Monitor and Page Systems

1. Functions:

a. Production communication: effective, uninterrupted cueing, operating and set-up communication between stage managers, directors, and designers and technicians installing, adjusting or operating performance systems and equipment. Includes separate communication channel between stage manager and house manager.

b. Performance monitor: transmission of audible stage sound to dressing rooms and related areas so that performers and technical staff may follow progress of performances, rehearsals and events. Similar transmission to selected lobby, public and office areas for late arrivals and front-of-house staff.

c. Back stage paging: individual and area paging in dressing rooms and related areas.

d. Lobby paging: paging of audience members during intermissions. Paging of performers or staff who may be in public areas during rehearsals.

2. Components:

a. Production communication: portable handsets, headsets, loudspeakers. Plug-in (jack) stations in all working areas. System amplifier and control components.

b. Monitor: microphone pickup at selected locations. System amplifier and control components. Loudspeakers in all monitor locations.

c. Paging: paging microphone at stage manager console for backstage paging, at box office typical for lobby paging. Systems amplifier and control components for backstage and for lobby. Loudspeakers in all paging locations.

3. Plumbing and Fire Protection Systems

A. Domestic Water System

1. Provide a new water service from the street, and a distribution system throughout the building, including exterior wall hydrants at planters.

2. Provide a domestic hot water generator and a distribution system serving all public and dressing area toilets.

B. Drainage Systems

1. Provide a sanitary drainage system leading to public street sewers, and incorporating ejectors serving floors below sewer level.

2. Provide an interior storm drainage system leading to public street sewers, and serving all roof levels and areaways.

3. Provide new first quality plumbing fixtures at public toilets (in numbers suitable to legitimate theatre use) and at dressing areas and shop areas as required.

C. Fire Protection System

1. Provide a separate service from the street, serving a fire standpipe system, and as required by Code, with all necessary Fire Department hose stations, siamese connections, fire and jockey pumps and house tanks.

2. Provide Code and Underwriter approved automatic sprinkler systems in below grade levels, stage houses and other areas where required. Systems shall include Fire Department siamese connections, house tanks and pumps and automatic flow alarms and like the standpipe system, shall be tied to the building alarm systems.

D. Systems for Retail Space

1. Provide capped supply and drain services at the perimeter wall, for extension by the lessee.

4. Heating, Ventilating and Air Conditioning Systems

A. Heating System

1. Provide a separate Boston Edison steam service from the street, with pressure reducing station and all appurtenances. Distribute the steam to each air handling system, and to perimeter radiation and cabinet heaters located at entrances and area of large exterior exposure.

B. Refrigeration Plant

1. Provide new refrigeration machines in a basement machine room, sized to handle the air conditioning load of the entire building, including concurrent performances in Theatres 2 and 3. Should Area 2 be built together with Area 1, consideration will be given to creating a single common refrigeration plant, permitting economies in maintenance and interconnection of generating machinery.

2. Cooling towers will be installed on the roof, shielded from public view by parapets.

C. Air Systems

1. All portions of the building except mechanical rooms, storage and service areas will be air conditioned. Design will be based on 20% minimum outside air, with provision for 100% outside air during intermediate seasons.

2. Built-up air handling rigs will be installed in mechanical rooms at theatre roof level and office building roof level with direct air intakes. Distribution will be via vertical chases to each floor level, where ceiling systems will distribute laterally. Return air ductwork will occur in the same chases. Ductwork will be concealed in all finished areas, but exposed in lower level shop and service areas.

3. Strict attention will be paid to fan and pump isolation, duct insulation, and grille selection in order to eliminate interference by exterior or system noise with performances and rehearsal.

4. Exhaust ventilation systems will be provided serving all toilets, storage rooms, and service.

5. A complete automatic temperature control system will be provided, of the pneumatic type, complete with automatic valves and dampers, control devices, and

alarms for all critical areas. A supervisory control panel will be installed at a central station, permitting a degree of control and monitoring as may be required by the building functional requirements.

D. Systems for Retail Space

1. Provide capped steam and chilled water supplies and ductwork at the perimeter wall of retail space for extension by the lessee.

5. Electrical Systems

A. Service and Distribution

1. Area 2 will be served with 277/480V 3-phase, 4-wire power provided by additional equipment to be installed in the transformer vault and switchboard rooms located within Area 1.

2. Distribution will extend to lighting and power panels located at each floor and major functional area. Floor and wall receptacles will be provided at normal standards throughout the building, with specific loads, like stage lighting, specifically served.

B. Lighting

1. Lighting in public lobbies and stairs will generally be concealed and indirect, illuminating wall and ceiling surfaces.

2. Lighting in Theatres 2 and 3 will be controlled as part of the performance control systems.

3. Lighting in Opera Company offices, Opera School and Opera Library will generally be recessed ceiling types, with special purpose lighting, and special high lighting wherever appropriate.

4. Lighting in shop, service, mechanical and egress areas will be strictly utilitarian, designed for maximum energy conservation consistent with functional necessity.

C. Emergency Power

1. An emergency generator will be provided to power exit lighting, alarms, certain elevators and other loads as may be determined necessary for safe and secure operation under emergency conditions.

D. Alarm and Communication Systems

1. Adequate space and an empty conduit system will be provided for use of the Telephone Company.

2. A fire alarm system satisfactory to Boston and insurance authorities, will be installed, incorporating manual pull stations, automatic detectors located in concealed areas and ductwork, public alarm bells, and a central annunciator panel. It will be interconnected with the automatic temperature control system for fan cutout and damper release.

Part E
Estimates of Construction Cost and Time

Area 2

GENERAL

Estimates of construction cost and of construction time have been prepared by the Boston office of Turner Construction Company, who have secured the advice of mechanical and electrical subcontractors in esti ating the work required in those critical areas. Allowance amounts for the performance systems and equipment have been furnished by the theatre design consultant, Bolt Beranek and Newman Inc., and are largely based on recently bid work. Allowance amounts for graphics and signing have been furnished to Turner by Cambridge Seven Associates.

The estimates cover construction cost only, and do not include costs such as financing, real estate taxes or rent during construction, design fees, testing and sub-surface exploration, owner's insurance, and movable furnishings or equipment. The contingency factor allows for normal development in the scope of work and for the lack of fully definitive data which is usual at this state of project development.

Estimates of cost assume that the work will be built as a single general contract, with commencement of Area 1 work occuring in December 1975, and commencement of the Area 2 work six months later. If the Area 2 work is carried out at some date after completion of Area 1, certain economies of scale and convenience will not exist, and an additional cost of $451,000.00 will be incurred. Beyond that, cost escalation will apply to any delay in award after spring 1976 at the rate of 8% per year.

CONSTRUCTION COST SUMMARY

Area 2

1.	General Construction (174,000 SF @ $61.58/SF)	$10,715,000	
	Foundation premium	500,000	
	Retail Shell space (4000 SF @ $40/SF)	160,000	$11,375,000
2.	Performance Systems		
	Stage Rigging		
	Theatre 2	259,000	
	Theatre 3	64,000	
	Lighting Controls & Fixtures		
	Theatre 2	232,000	
	Theatre 3	156,000	
	Sound Systems		
	Theatre 2	28,000	
	Theatre 3	23,000	762,000
	Contingency - 5%		607,000
	Escalation due to delay in award after Area 1 - 6 months		500,000
	TOTAL		$13,244,000

Assumed start of construction: 1 June 1976

Estimated construction time:
22 months (if built in step with Area 1)
24 months (if built at a later date)

Cost Comparisons

Area 2

Cost data on a number of new theatre complexes similar to Area 2 have been secured by the theatre design consultant, Bolt Beranek and Newman. None is exactly like Area 2. Each, upon close examination, will be found to have a different program, more or less elaborate fittings, a more or less difficult site. The cost figures are not escalated to 1975; they are as bid, at the time stated. The data is intended simply to establish the range of costs that have been encountered in the construction of performing arts centers.

1. Boise Civic Center
   Boise, Idaho

   300,000 SF at $85/SF
   bids received in late 1974
   scope: 3 theatres, rehearsal and shop space

2. University of Northern Iowa
   Cedar Falls, Iowa

   160,000 SF at $70 to $80/SF
   bids received in late 1974
   scope: 1 experimental theatre, rehearsal rooms, classrooms, shops, offices

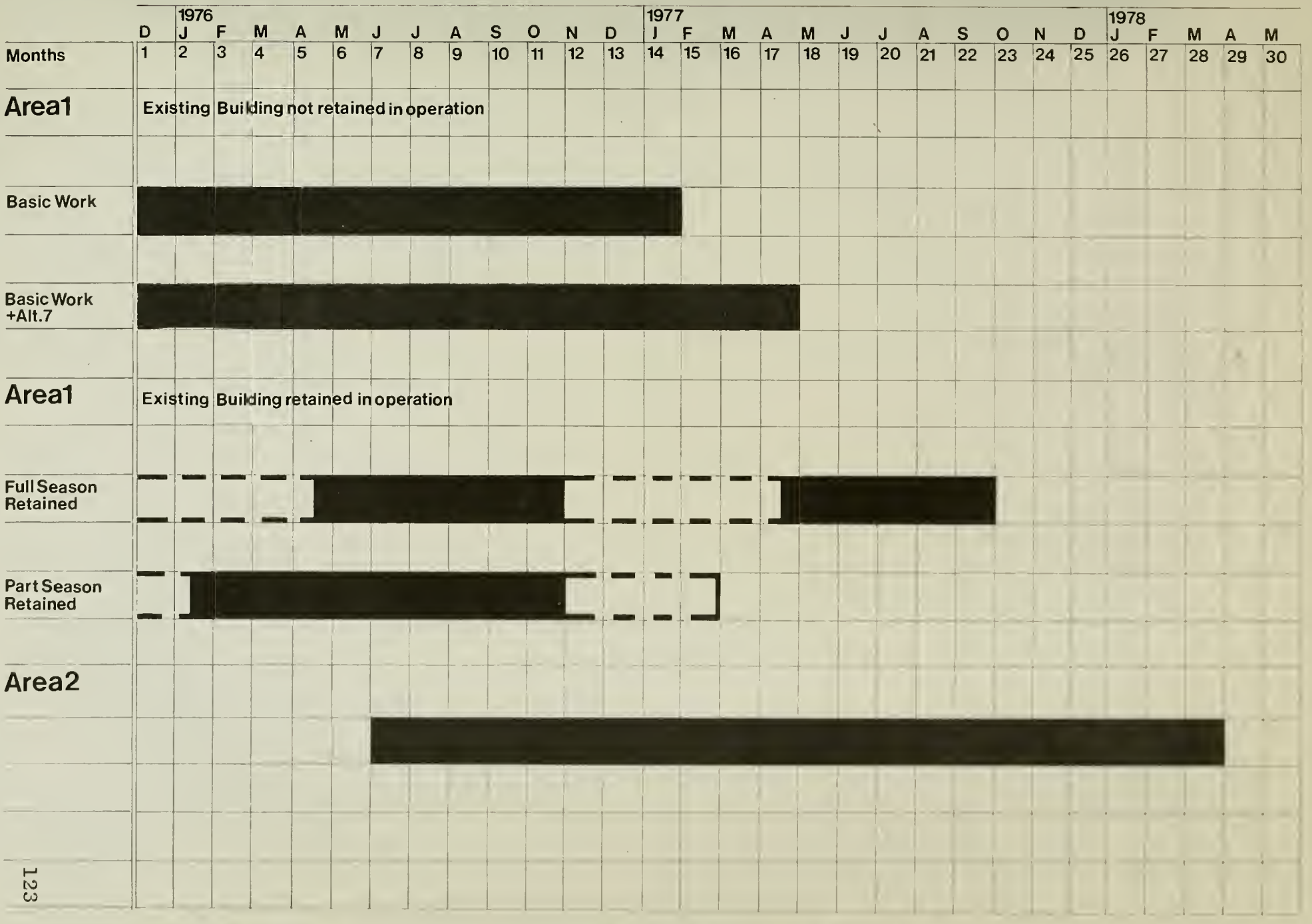
3. Indiana University Musical Arts Center
   Bloomington, Indiana

   188,505 SF at $59/SF
   construction begun in 1968
   scope: 1460 seat opera house, full production and opera school facilities

4. A Midwestern Performing Arts Center
   (Not yet awarded)

   160,000 SF at $120/SF
   bid received in early 1975
   scope: 2500 seat theatre, 800 seat proscenium theatre, 2 experimental theatres, shops and rehearsal areas, art gallery and classrooms
   site: restricted access, downtown city location

Music Hall Renovation Study Construction Schedule


1976
1977
1978
D J F M A M J J A S O N D J F M A M J J A S O N D J F M A M
Months
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30
Area1
Existing Building not retained in operation
Basic Work
Basic Work +Alt.7
Area1
Existing Building retained in operation
Full Season Retained
Part Season Retained
Area2

Dashes denote limited construction work underway while building is in use

APPENDIX

APPENDIX

Comparative Data: Recent Large Theatres page A 1-4

"The Case of Heinz Hall" page A 5-8

Letter: Turner Construction Company page A 9-12
February 19, 1975

A. RECENT LARGE THEATRES - U.S., PUERTO RICO, CANADA - NEW OR REMODELED, AS NOTED

Location - Name	Date (Status)	Stated Use	Seats	Max-Seat to Stage	Pit-Sq.Ft.	Musicians at Sq.Ft.	Prosc W x H	Stage D x W	Grid H	Rear Stage D x W x H	Side Stage(s D x W x H
NYC-Metropolitan Opera	1966 New	Opera	3778	±180'	1325 ft.^{2}	88x15ft^2	54x54	85x108	110	70x75x(35?)	L 80x75x(35) R 80x75x(35)
NYC-NY State Th	1964 New	Dance (Multi)	2729 (2804)	±160'	1120 ft.^{2}	90x12.4ft^2	56x51	58x80	90	- No	L 38x38(x30?) R 38x38(x30?)
Houston-Jesse Jones	1967 New	Multi	3001 (1800)	±165'	936 ft.^{2}	60x15.5ft^2	61x31	55x120	85	- No	- No
Milwaukee-Uihlein	1968 New	Multi	2327	±135'	1200 ft.^{2}	80x15ft^2	64x45	55x125	105	No	No
U. Arizona-Gammage	1964 New	Multi	3000	±125'	720 ft.^{2} 1250 ft.^{2}	83x15ft^2	64x30 (30x15)	50x100	87	No	L 50x20x25 R 50x20x25
Norfolk-Civic Aud	1971 New	Multi	2200	±125	880 ft.^{2}	60x14.5ft^2	58x35	44x88	70	8x101x35	L 40x36x35 R 34x38x35
Sacramento-Civic Th	1974 New	Multi	2260	±125'	650 ft.^{2} (980)ft.^{2}	65x15ft^2	60x35	45x100	75	20x120x36	L 45x30x36
Dallas-Fair Park	1973 Rem.	Multi	3130	160'	520 ft.^{2} 968 ft.^{2}	64x15ft^2	52x30 (40x20)	40x100	70	45x69x35	No
D.C. - Opera House Kennedy Center	1972 New	Multi	2200	±130'	1200 ft.^{2}	80x15ft^2	60x40	60x90	90	30x200x35	L ±50x20x30 R ±50x20x30

Notes: 1. Dates, stated uses and dimensions from various sources including BBN records, published articles and public relations material.

2. Dimensions based on above. In some cases scaled from drawings. In some cases extrapolated from published data.

A. RECENT LARGE THEATRES - U.S., PUERTO RICO, CANADA - NEW, UNDER CONSTRUCTION OR IN DESIGN, AS NOTED

Location - Name	Date (Status)	Stated Use	Seats	Max-Seat to Stage	Pit-Sq.Ft.	Musicians at Sq.Ft.	Prosc W x H	Stage D x W	Grid H	Rear Stage D x W x H	Side Stage(s) D x W x H
Puerto Rico-Festival Th Centro de Bellas Artes	In Const.	Multi	2100	±120	520 ft.^{2} (920 ft.^{2})	65x14ft^2	62x32 (48x16)	49.5x134	70	No	L = No R 48x20x33
Tulsa-Large Theatre Perf. Arts Center	Bid-Const.	Multi	2350 (2430)	±135	585 ft.^{2} (1047 ft.^{2})	70x15ft^2	60x33 (50x26)	54x102	84	10x41x34	L = No R = No
Nashville-Large Th Civic & Cult. Ctr.	Design	Multi	2400 (2500)	±128	559 ft.^{2} (1001 ft.^{2})	66x15ft^2	66x33 (50x26)	54x120	84	No	L 54x16x30 R = No
Ottawa-Nat.Arts Centre	1969 New	Multi	2300	±105	1200 ft.^{2}	80x15ft^2	60x40	62x85	90	±40x55x40	L = ±62x50x40 R = ±62x50x40
Montreal - Wilfred Pelletier-Place des Arts	1968 New	Multi	2885 (2963)	±140	1500 ft.^{2}	70x15ft^2 (20 min)	69x34 (42x20)	55x100	80	No	L 55x45x30 R = No
Quebec - Louis Frechette Grand Th. de Quebec	1971 New	Multi	1600 (1800)	±105	1450 ft.^{2}	120x12ft^2	±60x40	60x100	90	24x120x40	L 60x15x40 R 50x52x40
Hamilton-Great Hall Hamilton Place	1973 New	Multi	1959 (2138)	±120	1056 ft.^{2} (2080 ft.^{2})	70x15ft^2 (138x15ft^2)	48x26	38x92	68	20x129.5x30	L 37.5x30x30 R = No
Winnipeg-Centennial	1968	Multi	2243	±115	1044 ft.^{2} (1422 ft.^{2})	94x15ft^2	54x46	57x78	84	13x78	L 56x52x(30?) R 56x26x(30?)
Saskatoon-Centennial	1968	Multi	1980	±100	928 ft.^{2} (1088 ft.^{2})	72x15ft^2	59x32	55x124	80	No	L 55x57x35 R = No

Notes: 1. Dates, stated uses and dimensions from various sources including BBN records, published articles and public relations material.

2. Dimensions based on above. In some cases scaled from drawings. In some cases extrapolated from published data.

B. RECENT LARGE THEATRES, EUROPE, AUSTRALIA - NEW, REMODELED, UNDER CONSTRUCTION, IN DESIGN, AS NOTED

Location - Name	Date (Status)	Stated Use	Seats	Max-Seat to Stage	Pit-Sq.Ft.	Musicians at Sq.Ft.	Prosc W x H	Stage D x W	Grid H	Rear Stage D x W x H	Side Stage(s) D x W x H
Melbourne-State Opera	Design New	Opera (Multi)	2024	±122'	952 ft.^{2} (1624 ft.^{2})	108x15ft^2	58.5x30.5	58.5x85	85	47x58x33	L 58.5x33x33
Salzburg-Festival Th	1960 New	Opera	2300	±118'	1227 ft.^{2}	102x12ft^2 (81x15ft^2)	98x29 (45x0)	82x141	91	No	L 49x59 R 49x59
Munich-National Th	1963 Renov.	Opera (Multi)	2123	98'	1711 ft.^{2}	120x13ft^2 (114x15ft^2)	51x42 (42x21)	85x101	103	65x95x37	L = No R 147x68x37
Berlin-Deutsche Opera	1961 New	Opera	1900	±105'	1400 ft.^{2}	100x14ft^2 (93x15ft^2)	47x26 (36x26)	68x88	90	70x75	L 63x59 R 39x73
Warsaw-National Th.	1965 New Reconst	Opera (Multi)	1900	±100'	1080 ft.^{2} (1800 ft.^{2})	72x15ft^2 120x15ft^2	50x45	90x120	120	80x95x50	L 90x80x50 R 90x80x50
Hamburg-Statsopr.	1955 New Reconst	Opera (Multi)	1679	±120'	1388 ft.^{2}	92x15ft^2	39x27 (29x13)	49x59 (Exist'6)	95	24.5x49	L 36x24 R 36x24
Frankfurt A.M. - Municipal	1951 New Reconst	Opera Ballet	1430	±112'	1065 ft.^{2}	71x15ft^2 (80x13ft^2)	49x36 (32x9.5)	62x77.5 New	85	65x68 New	L 62x32 R 62x32
Hanover-Stats Th.	1965 Remodl	Multi	1500 Old	±90'	1388 ft^2 (1506ft^2)	92x15ft^2 100x15ft^2	46x38 (27x0)	65x98	84.5	25x56	L 53x68 R 53x68
Cologne-Opera	1957 New	Opera Ballet	1346	±93'	1076 ft.^{2}	71x15ft^2 (89x12ft^2)	62x42	82x91	85	60x62	L 49x62 R 72x62

Notes:
1. Dates, stated uses and dimensions from various sources including BBN records, published articles and public relations material.
2. Dimensions based on above. In some cases scaled from drawings. In some cases extrapolated from published data.
3. European and other metric dimensions rounded to nearest foot.

B. RECENT LARGE THEATRES - EUROPE, AUSTRALIA, CONT.

Location - Name	Date (Status)	Stated Use	Seats	Max-Seat to Stage	Pit-Sq.Ft.	Musicians at Sq.Ft.	Prosc W x H	Stage D x W	Grid H	Rear Stage D x W x H	Side Stage(s) D x W x H
Mannheim-National	1957 New	Multi	1201	±98.5	1076 ft.^{2}	71x15ft^2	65x33 (34x13)	82x98	82	45x82	L 45x36 R = No
Gelsenkirchen-Municipal Theatre	1959 New	Multi	1018	±87	1130 ft.^{2}	75x15ft^2	51x30.5 (39x16)	78x73	79	45x52x	L 54x54 R 44x54
Berlin-Freie Volksbh	1963 New	Plays	1047	±85	304 ft.^{2}	20x15ft^2	41x26 (29x15)	68x52	60	39x63	L = No R = 42x73
Dortmund-Municipal	1966 New	Multi	1160	±111	1162 ft.^{2}	77x15ft^2	49x26 (37x18)	59x83	82	49.5x59	L 45x55 R 45x62
RecklingHausen-Ruhr Festival	1965 New	Plays (Multi)	1061	±98	1270 ft.^{2}	84x15ft^2	47.5x27 (33x14)	61x82	79	46x62	L 59x61 R 41x24
Ludwigshaven-Pfalzbautheater	1968 New	Multi	1175	±103	882 ft.^{2}	60x14.7ft^2	46x26 (26x19)	68x82±	82	51x64	L = No R 58x49

Notes:
1. Dates, stated uses and dimensions from various sources including BBN records, published articles and public relations material.
2. Dimensions based on above. In some cases scaled from drawings. In some cases extrapolated from published data.
3. European and other metric dimensions rounded to nearest foot.

BCA news

A publication of the
BUSINESS COMMITTEE
FOR THE ARTS, INC.

No. 19, August, 1972

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BCA to Co-Sponsor Several State-Wide Conferences on Business and the Arts

BCA has begun intensive efforts to bring about conferences between businessmen and arts leaders within individual states as a second phase in its nation-wide program to develop business involvement in and support of the arts. Each conference involves an initial meeting of a selected group of business and arts leaders which, if successful, leads to a second conference involving a much larger number of businessmen and arts organization managers.

Full conferences are scheduled in Indianapolis, October 9th and 10th; Racine, Wisconsin, September 20th and 21st; New Orleans, Louisiana, November 20th. BCA Chairman Dr. Frank Stanton will speak at all three conferences.

Several initial pilot meetings are scheduled for the fall. One meeting to work out plans for a broader conference in California will be held in the Los Angeles Music Center on October 5th. The meeting will include business and arts leaders and representatives of BCA. The host will be BCA member B. Gerald Cantor, chairman and president of Cantor, Fitzgerald and Company. A similar pilot meeting will be held in Oklahoma City on November 15 and it will be co-hosted by Mr. Dean McGee, chairman, Kerr-McGee Corporation, and the Oklahoma City Arts Council. The meeting will be held in the offices of Kerr-McGee Corporation. Arrangements are nearing completion for a pilot meeting to be held in Atlanta, Georgia, prior to December 1 under the sponsorship of Georgia's Governor Carter and several prominent Georgia businessmen. Pilot meetings will also be held shortly before or after the first of the year in Lincoln, Nebraska and in Florida. Initiative for the latter was taken by Florida's Division of Cultural Affairs. *(Cont. on back page)*

Before and after: The old Penn Theater (left) and (right) its transformation into Heinz Hall.

How the Arts Helped to Reclaim the Heart of a City: The Case of Heinz Hall

When it comes to the care and feeding of culture, few American cities have an older tradition or a more distinctive style than the three-rivered city in the Allegheny Mountains named for William Pitt.

Pittsburgh began its third century, in 1971, five years before the 200th anniversary of American independence. As long as 100 years ago, its mineral rich mountains and navigable rivers made it a natural capital for modern industry. But it took human capital, too: the basis of the city's historic emphasis on the importance of culture.

(Cont. on next page)

FRANK STANTON ANNOUNCES NEW BCA MEMBERS

Dr. Stanton has announced that the following prominent business leaders have joined BCA: Mr. Gerald Bartell, Chairman of the Board, American Medical Building Guild, Inc., Mr. Archie R. Boe, Chairman Allstate Insurance Company, Mr. John H. Devlin, Chairman of the Board, Rothmans of Pall Mall Canada, Limited, Mr. Thomas S. Carroll, President and Chief Executive Officer, Lever Brothers Company.

THE CASE OF HEINZ HALL (Cont. from first page)

Take Andrew Carnegie for example. This feisty 19th century Pittsburgher understood the relationship between knowledge, business and culture. So, with part of the fortune he made by providing the steel bridges, railroads and buildings that an educated human energy would need, he endowed the public library system, a very basic contribution to America's cultural and economic development.

But if Andrew Carnegie's work illustrates Pittsburgh's contribution to 19th century culture, Heinz Hall for the Performing Arts, opened only a year, shows how community involvement in the arts can help win a very significant battle against one of this century's most pressing problems. In this light the Heinz Hall story has real national significance.

Renewal of a City

To put the story in focus, one must go back to the late 1940's. To renew its urban environment, Pittsburgh tore down the old "Point," replacing it with Gateway Center "downtown" where two rivers merge to form the Ohio River. That renaissance continued through the 1950's. By the 1960's, attention turned to the Hill, the "uptown" business district. There, Chatham Center, U.S. Steel Building, Mellon Park, Oliver Plaza and other construction formed a vast private renewal, down the hill, almost to "midtown." There it stopped.

During these years, the jewel of Pittsburgh's artistic life, the Pittsburgh Symphony Orchestra, was getting ever closer to financial disaster. What in 1972 is the most successfully housed and endowed orchestra in America was next to broke and homeless in 1960. Its president, an urbane Pittsburgh attorney named Charles Denby, realized the orchestra could not meet its future costs or competition without a permanent home and healthy endowment. More important, he realized neither home nor endowment was possible without the other. Foundations like Ford and others offered millions of dollars to orchestras that could match their grants. But how does one raise local money for a Symphony that had outgrown its previous hall in Oakland. Worse, that location was not centralized enough to be convenient for most Pittsburghers.

That problem had been studied. A multimillion dollar cultural center was to be erected "uptown" and financed with personal and government funding. The Symphony, they said, could board there. But five years later that plan had not materialized. Desperate, Denby went to see his friend, Henry J. Heinz II, chairman of the board of H.J. Heinz Company, and trustee of the Howard Heinz Endowment. "We need an insurance policy," Denby explained.

Between its improved downtown and uptown sections, midtown Pittsburgh's business district was a depressing reminder of yesterday, a nondescript no-man's land where the only apparent solution to urban decay and declining values was a growing number of parking lots where buildings once stood. Midtown was the urban core that epitomizes the plight of many industrial cities today.

At the center of the midsection atrophy was its most interesting survivor, the old Penn Theatre. Built in 1927 for vaudeville and movies, it celebrated a style now dead. It was quite a showplace in its time. But like its counterparts in other cities—landmark architecture notwithstanding—the old Penn Theatre awaited urban renewal's wrecking ball when Denby asked Heinz to acquire the building for the Symphony "just in case." The Howard Heinz Endowment paid out a round million to purchase and maintain the Penn. While the Symphony Society quietly hoped for a better fate, the old Penn stood idle.

Heinz's Initiative

For two years they waited. The horns of the Symphony's dilemma became more acute. The deadline to collect its matching grants was 1971 and to match those funds by then, they needed a home. Time was up. Denby again went to Heinz. And, in 1969, the Heinz Endowment agreed to become the principal underwriter for the project, *stipulating that other interests in the city should support the Symphony in its new home.* To check feasability, Heinz called in the then recently retired president of his international food company.

"We had a long lunch and chat Halloween Day, 1969," recalls Frank Armour, Jr., "less than two years to the day the place had to open." A month later, the Pittsburgh Symphony Society packed 4000 business and civic leaders into the Penn to hear the Symphony. Proceeds went to the pension fund while ballots were passed out to measure reaction to the building's location for a pre-retirement home for the orchestra's musicians. "Eighty percent voted for it," Armour remembers. For Denby, the problem seemed solved. But in the mind of the man whose family name the building would bear, an idea was just beginning to grow.

Its new dimensions were apparent in project director Frank Armour's mind, too, as reflected in the first two recruits to his team. He and Symphony manager Seymour L. Rosen held regular consultations with Gurdon F. Flagg and Milton Hulme, Pittsburgh business leaders who are the respective heads of Pittsburgh Opera and the Pittsburgh Civic Light Opera. Gradually, "casual interest" in a multi-purpose performing arts center at Penn Avenue and Sixth Street turned into desire.

Corporate Involvement

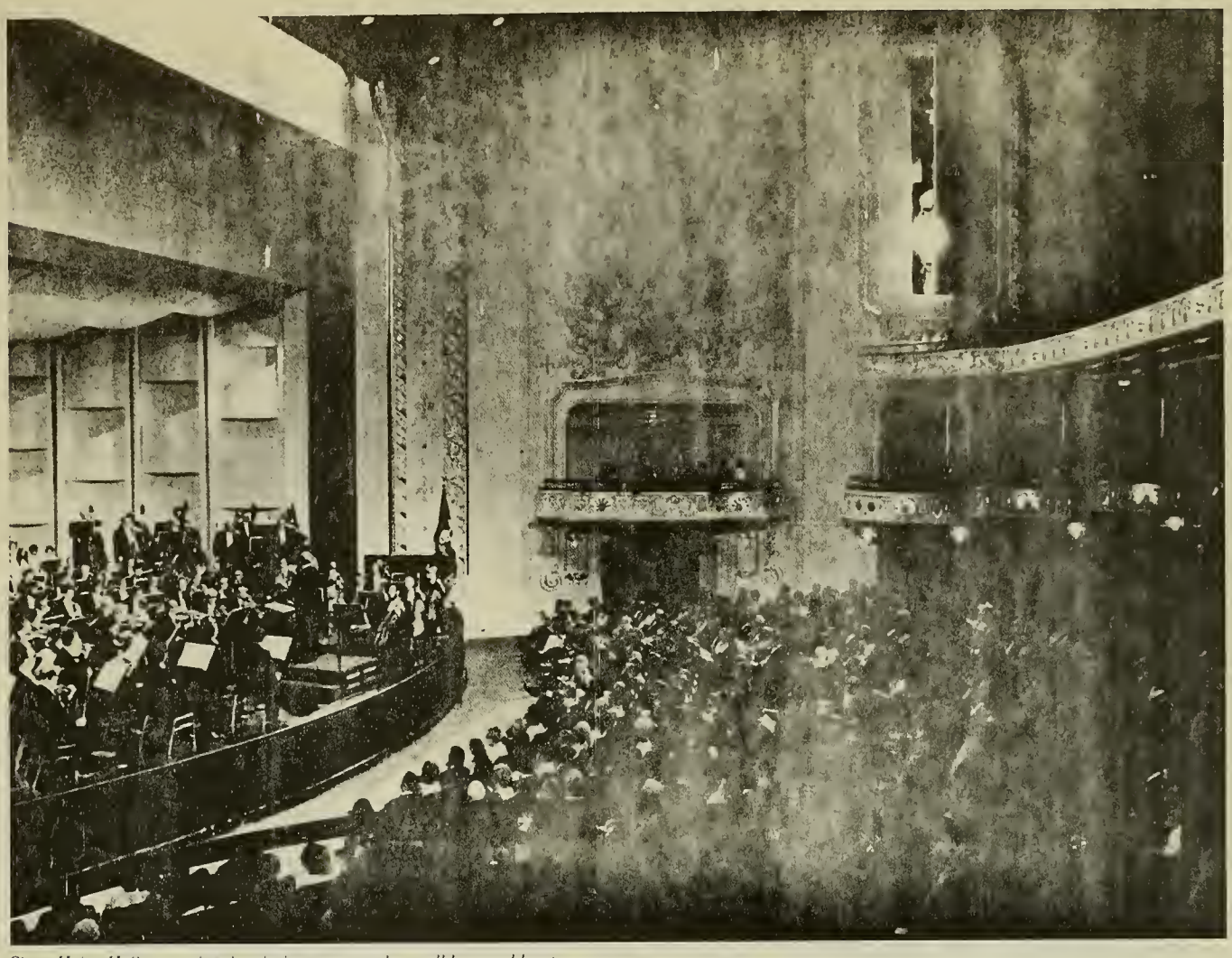
Architects, engineers and other consultants were called in. Even more numerous, however, were the volunteers, men like John Angle, U.S. Steel executive vice president; Ed Loughney, executive vice president, Gulf Oil; George Wilcox vice chairman of Westinghouse; Joseph A. Neubauer, president of PPG Industries. Other industrial leaders took active roles where and whenever they were needed. Fred Close, then Alcoa chairman, for example, sent over his top construction people to "prep" the planners on what to expect in building renovation. Likewise, Westinghouse came aboard with offers of engineering, service and counsel. And so did others.

Now the media and miscellaneous civic groups voiced their support for a performing arts center. But there was one big hitch. Physically, the old Penn was too small. The major drawback to the idea was the additional space needed for the flexibility of sound and stage facilities that are essential for orchestra, ballet, and opera. Finally, the famed German acoustician, Dr. Heinrich Keilholz, advised that it would be possible to put a performing arts center there if more space could be found. The planners took up that challenge, too. In a coup that provided five new floors and 31,084 square feet of room, the project team acquired an adjacent parking lot and a city-owned alley. Considering that half the city's international telephone cable, along with its major gas, sewer, water and electric arteries lay under that alley, it was no small task.

From Movie House to Concert Hall

After six months they had a plan and the space to execute it. February 28, 1970, a benefit concert sponsored by the Golden Triangle Association (a local retailers organization) laid the old Penn Theatre to rest. After the concert, crews moved in to strip and scrape the theater down to a shell from which a performing arts center would emerge; inside and out, careful to preserve its ornate, baroque, rococo decor. Dedication was set for September 10, 1971, a mere 18 months away.

But Dedication would not be the *first* concert scheduled for the new Heinz Hall for the Performing Arts. A preview performance was scheduled on Labor Day week-



Since Heinz Hall opened, subscription concerts have all been sold out.

end, two days before Dedication. This special, private affair for the families of the painters, plumbers, electricians, carpenters, ironworkers, steam fitters, plasterers, gilders, bricklayers and masons honored the craftsmen who gave the building its new and glittering elegance.

When word of this concert got out, Heinz Hall's hard hats were Pittsburgh's men of the hour; their wives and children were the envy of their neighborhoods. A tremendous outpouring of civic pride accompanied this first event and moved Heinz Hall closer to the community-wide identification that its founders hoped for.

For years, conductor William Steinberg had complained, "If you really want to hear the Pittsburgh Symphony, hear it in Carnegie Hall, New York." There were no acoustics in Pittsburgh capable of doing justice to the orchestra's true sound.

On the evening of September 10, 1971, 2731 formally dressed guests made their way across the polished marble lobbies and into the lush red carpeted Hall. As the resplendent crowd took its seats, expectant, the lights dimmed. Maestro Steinberg's baton came down. And then, there came forth a sound never heard before, but long awaited in Pittsburgh. It was a big sound, grand and full and rich.

"Acoustical gem" read the *New York Times* headline. "....an acoustical gem..." echoed *Time Magazine*. There is of course, much more to Heinz Hall than its sound, more even than the rising profile its greater variety of resident companies gives the arts in Pittsburgh. In the end, the arts depend on dollars. And in this respect Heinz Hall offers some interesting figures.

Financial Backing

Typical of Pittsburgh's past practice in supporting local art forms, Heinz Hall came largely from private undertaking, independent of governmental grants. Private funds received from widely dispersed community sources, including the general public, was essential to the local participation and involvement. Henry J. Heinz II envisioned community involvement as the essential element for building viability into the arts in Pittsburgh. It seems to be working.

The Symphony Society built a $23 million endowment from 573 individual donors, 78 corporate givers, 39 financial institutions and 40 charitable foundations; at the same time an estimated $10 million was being raised for the Hall itself. Of the estimated $33 million total, no less than $20 million came from the Howard Heinz Endowment, whose name along with other donors, including the smallest ($12.50), appears on a bronze plaque in the lobby that commemorates the Hall's founders.

These are the people who got it started. Since then, nearly half a million more have been attracted from the tri-state area, from across the country and around the world to enjoy and support 190 performances of Pittsburgh's Ballet, Opera, Light Opera, Symphony, Youth Symphony and its International Artists. Special events have been staged for pre-school and senior citizens. In spite of that diversity and the normal first year adversities, and thanks to cost-conscious professional management Heinz Hall's first annual operating deficit is astoundingly low; about $100,000. The Symphony has added 12 concerts to its subscription series and it is completely sold out. Ticket sales for the other resident companies have risen sharply.

(Cont.

CBS to Present Plays Produced by the New York Shakespeare Festival Theatre

The Columbia Broadcasting System has announced that it will present 13 dramatic specials over the next four years produced by Joseph Papp's New York Shakespeare Festival Public Theatre. The first presentation, a three-hour production of Shakespeare's "Romeo and Juliet," will be aired early in 1973. Future productions will include both classic and contemporary works and some of the latter will be presented for the first time. The productions will be scheduled in prime-time on the network's 200 affiliate stations.

In an editorial commenting on the new series, the *New York Times* praised CBS for "its willingness to raise the standards of taste for its millions of viewers." "The idea," the editorial continued, "is not to make good theater just an occasional 'special' but a 'regular'—still a dream but one that could be realized if there is a turnabout in thinking away from the ratings notion that American viewers will tune out anything of a serious nature in favor of Joe Sixpack programming. Surely the B.B.C. dramas that have played on public TV proved that an attentive and appreciative mass audience exists for quality programs."

BCA CO-SPONSORS STATE-WIDE CONFERENCES

(Cont. from first page)

The state-wide conferences will discuss how the arts can play a vital role in the community and the state and the ways in which business and businessmen can help bring this about. The agendas will also include discussions of funding for the arts from business and government sources, annual awards to recognize outstanding examples of business-arts cooperation, and community arts programs and their relationship to urban problems.

BCA members in the states where the conferences will be held have been invited to participate in panel discussions.

Heinz Hall

(Cont. from page 3)

Some 273 non-paid directors link their six resident companies to local civic and business life lines. A team of professional managers handles daily operation at the Hall. Between the Hall's directors, companies and management is the man Henry Heinz called in to see if his idea was feasible. As project director, Frank Armour made sure it was. In August, 1971, the board of directors elected him as their first president. Now in the second year of his three year term, Armour watches the Hall with a businessman's eye outside as well as in the Hall. "We've kept an informal check that shows specific increases among downtown businesses that they, not us, attribute directly to Heinz Hall."

Culture Is Good Business

Stouffers, a 500-seat restaurant complex half a block from the Hall, had a "definite increase, roughly 15 to 20 percent this year. When there's a performance at the Hall, we're sold out," says Ron Bacon, manager. And there were 190 performances in the first 365 days.

The same impact is felt three blocks away, but on another level. The exclusive Duquesne Club reports an increase of "seven to ten percent just in the ladies' dining room..." "A general increase of ten percent overall," says Secretary-Treasurer, Gurdon Flagg. "That's especially significant considering that business would have been down this year, judging from what's going on at other clubs. There's no question about it. Heinz Hall has made the difference, especially for us," he says. Duquesne Club members have something to bring them downtown at night.

Jacques Kahn, executive director of Golden Triangle Association, agrees. "Heinz Hall has been a catalyst in every way. It revitalized the entire Triangle." G. Edward Wallis, vice president of Westinghouse Broadcasting in Pittsburgh, adds to the catalyst theory. "Other cities are closing theaters (Cleveland closed five). We're opening them here. On weekends, parking lots that used to be empty are jammed."

The best effect from a commercial point of view was reported by Herbert Leeds, Gimbels president. "Gimbels benefits from Heinz Hall in several ways...more exposure to downtown by thousands of people, increased sales in social occasion ready-to-wear clothes, increased sales in recorded classical music, and a greater general awareness of downtown Pittsburgh as "where the action is."

That's the picture on the downtown streets, from the dining room to the sales counter. What does it look like up in the towers of the giant corporations, of which Pittsburgh has a hefty share?

"You don't improve a city esthetically without helping it economically," says Christian Lantzsch, senior vice president and comptroller of Mellon National Bank and Trust Company. "Like painting a building, there's higher value than just making it look better. Protecting and preserving it makes economic sense, too."

William Carpenter, vice president, corporate relations, PPG Industries, says, "Recruitment is a lot of intangibles, not just at the college PhD level, but tied up with the established executive who is concerned with where and how his family will live. That really makes a difference today. Heinz Hall makes a difference here, too."

Still, the happiest results brought by Heinz Hall are long term. As such, they're still immeasurable. But they're visible.

Rather than tear down the old to build newer, bigger and more costly structures, and rather than move out of a depressed area only to depress it further, Pittsburgh salvaged an architectural landmark and revitalized its urban core. "It's how we did 'it' here in Pittsburgh that offers the best example to other cities," says architect Stephen George, head of City Parks and Recreation. "When we reclaimed the heart of the city, we saved its soul." In the process, downtown's renaissance was joined to uptown's renewal with a greater urban integrity for the future.

This beneficial impact of art on business poses a question that might well be asked more often in more cities today: "What is the real function of the city?" Has its central business function been tied to the city's cultural needs?

One thing hardly seems debatable. The city is a man-made political and economic structure in very serious trouble. If man will enrich that structure culturally, by art for example, he can regenerate the city and the quality of life for those who are economically compelled to live there. If he does, the Pittsburgh experience suggests economic vitality will follow.

BCA news is published by Business Committee for the Arts, Inc., a non-profit organization at 1270 Ave. of the Americas, N.Y. 10020.

Turner Construction Company

FOUNDED 1902

38 NEWBURY STREET, BOSTON, MASSACHUSETTS 02116

TELEPHONE: 617-266-2600

February 19, 1975

Cambridge Seven Associates, Inc.
1000 Massachusetts Avenue
Cambridge, MA 02138

Attention: Mr. William Goodwin

Gentlemen:

Re: Renovations - Boston Music Hall

Supplementing our letter of January 31, 1975, in which we furnished you with a budget estimate for the renovations of the Boston Music Hall, we now enclose the following.

Enclosure A: A second tabulation of our total construction budget set up in a somewhat different format and incorporating certain suggested changes that have helped to reduce the total amount.

Enclosure B: This is the same systems breakdown submitted with our letter of January 31 but with a one-line adjustment for changes made to date in the different items of work.

Changes mentioned above consist of:

a. Reupholstered seats in lieu of new
b. Re-use of some plumbing fixtures
c. A reduction in the size of the second basement
d. Brick exterior wall on the stage house extension in lieu of precast
e. Reductions in the BBN allowances
f. Added dressing rooms at Elevation 36 back of the stage area
g. Re-allocation of some items from one account to another
h. A reduction in the amount of contingency carried in price B.

If you have any question on any of the above, we will be pleased to discuss it further with you.

Very truly yours,

J. M. Scanlon

J. M. Scanlon
Estimating Engineer

JMS:js

BOSTON MUSIC HALL
Boston, Massachusetts
Additions and Alterations

Budget Breakdown

Area I - Basic Work

I.	Stage House Expansion	41,500 sf at 71.76	2,978,000	
	Retail Shell Space	2,000 sf at 40	80,000	
	Stage Rigging Systems		330,000	
	Stage Lighting Control System		240,000	
	Portable Fixtures		45,000	
	Sound Reinforcement and Effects		60,000	
	Production Communication and Monitor		15,000	
	Contingency		375,000	
				4,123,000
II.	Renovation Work	88,000 sf at 21.66	1,906,000	
	Lighting Bridge		15,000	
	Proscenium Lighting Bridge		70,000	
	Followspot Locations		21,000	
	Rear Control Booth		3,000	
	New Marquee		50,000	
	Contingency		207,000	
				2,272,000
III.	Utility Relocation (Allowance)			75,000
	Total Area 1			6,470,000

Area I - Alternative Work

I.	Install 4039 new seats in lieu of 4039 reupholstered seats	Add $178,000
II.	Provide metal curtain permitting temporary elimination of third balcony seating	Add $ 11,000
III.	Raise orchestra level floor to provide better sight-lines and install re-spaced conventional seating (1930 orchestra level reupholstered seats)	Add $174,000
IV.	Raise orchestra level as in III above but install continental seating (1860 orchestra level reupholstered seats)	Add $170,000
V.	Remodel present smoking room into function room	Add $136,000

VI.	Substitute orchestra pit lift for fixed pit floor	Add	$187,000
VII.	Provide 7,500 sf usable area for sub-basement dressing and rehearsal areas	Add	$591,000

Area I - Theatre Park

I.	Buildings	
	Retail Shell Space (7,300 sf at 50)	365,000
II.	Sitework	75,000
III.	Theatre Bulletin Tower	350,000
	Contingency at 10%	79,000
	Total - Theatre Park	$869,000

Budget Breakdown

Area II - Basic Work

I. General Construction		
A. (174,000 sf at 61.58)		10,715,000
B. Foundation Premium		500,000
II. Retail Shellspace (4,000 sf at 40)		160,000
II. Performance Systems		
Stage Rigging Systems		
Theatre 2	259,000	
Theatre 3	64,000	
Lighting Controls & Fixtures		
Theatre 2	232,000	
Theatre 3	156,000	
Sound Systems		
Theatre 2	28,000	
Theatre 3	23,000	
		762,000
		12,137,000
Contingency at 5%		607,000
		12,744,000
Escalation, 1 December 1975 to 1 June 1976 starting date		500,000
Total		13,244,000

Note Later Construction Costs

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BRA
Music Hall renovation study